DELAWARE RIVER BASIN
TRIBUTARY TO WEST BRANCH LACKAWAXEN RIVER
WAYNE COUNTY

PENNSYLVANIA

LEVEL II

ROSNER POND DAM

NDI ID NO. PA-01111
DER ID NO. 64-190

OTIS ROSNER

PHASE I INSPECTION REPORT
NATIONAL DAM INSPECTION PROGRAM

"Original containing color plates: All DTIC reproductions will be in black and white"

DEPARTMENT OF THE ARMY
Baltimore District, Corps of Engineers
Baltimore, Maryland 21203

DELAWARE RIVER BASIN

TRIB. TO WEST BRANCH OF LACKAWAXEN RIVER, WAYNE COUNTY

PENNSYLVANIA

ROSNER POND DAM

NDI ID No. PA 01111
DER ID No. 64-190

Mr. Otis Rosner

PHASE I INSPECTION REPORT

NATIONAL DAM INSPECTION PROGRAM

Prepared By:

DEPARTMENT OF THE ARMY
Baltimore District, Corps of Engineers
Baltimore, Maryland 21203

JUNE 1981

PREFACE

This report is prepared under guidance contained in the Recommended Guidelines for Safety Inspection of Dams, for Phase I investigations. Copies of these guidelines may be obtained from the Office of Chief of Engineers, Washington, D.C. 20314. The purpose of a Phase I investigation is to identify expeditiously those dams which may pose hazards to human life or property. The assessment of the general condition of the dam is based upon available data and visual inspections. Detailed investigation and analyses involving topographic mapping, subsurface investigations, testing, and detailed computational evaluations are beyond the scope of a Phase I investigation; however, the investigation is intended to identify any need for such studies.

In reviewing this report, it should be realized that the reported condition of the dam is based on observations of field conditions at the time of inspection along with data available to the inspection team.

It is important to note that the condition of a dam depends on numerous and constantly changing internal and external conditions, and is evolutionary in nature. It would be incorrect to assume that the present condition of the dam will continue to represent the condition of the dam at some point in the future. Only through frequent inspections can unsafe conditions be detected and only through continued care and maintenance can these conditions be prevented or corrected.

Phase I inspections are not intended to provide detailed hydrologic and hydraulic analyses. In accordance with the established guidelines, the spillway design flood is based on the estimated "Probable Maximum Flood" for the region (greatest reasonably possible storm runoff), or fractions thereof. The spillway design flood provides a measure of relative spillway capacity and serves as an aid in determining the need for more detailed hydrologic and hydraulic studies, considering the size of the dam, its general condition, and the downstream damage potential.

NDI ID No. PA-01111, DER ID No. 64-190

PHASE I INSPECTION REPORT

NATIONAL DAM INSPECTION PROGRAM

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PHASE I INSPECTION REPORT

NATIONAL DAM INSPECTION PROGRAM

BRIEF ASSESSMENT OF GENERAL CONDITION AND RECOMMENDED ACTION

Name of Dam: Rosner Pond Dam
NDI ID No. PA 01111
DER ID No. 64-190

Size: Small (24.5 feet high; 380 acre-feet)

Hazard Classification: High

Owner: Mr. Otis Rosner
Aldenville, PA 18401

State Located: Pennsylvania

County Located: Wayne

Stream: Tributary to West Branch of the Lackawaxen River

Date of Inspection: 25 March 1981

The visual inspection and review of available data indicate that Rosner Pond Dam is in poor condition. The lack of a spillway and the poor condition of the outlet works are the primary deficiencies which cause concern for the safety of this facility. In accordance with the recommended guidelines, the spillway design flood (SDF) for this facility is in the range of 1/2 PMF to full PMF. Based on the size of the dam and degree of downstream hazard, the selected SDF is the 1/2 PMF.

The hydrologic and hydraulic computations indicate that the combination of reservoir storage and outlet works discharge capacity will not pass the SDF (1/2 PMF) prior to overtopping the embankment. Under present conditions, the discharge/storage capacity is 11% of the PMF prior to overtopping. In accordance with the criteria outlined and evaluated in Section 5.5 of this report, the discharge capacity for Rosner Pond Dam is considered to be seriously inadequate. The dam in its present condition is considered to be unsafe, non-emergency.

The following recommendations should be implemented immediately:

a. The owner should retain a qualified professional engineer experienced in dam design and construction to perform a detailed hydrologic and hydraulic analysis of the dam for the purpose of determining measures required to

provide an adequate discharge capacity. The existing outlet works should be evaluated by the engineer as part of this study. Remedial measures recommended by the engineer at the conclusion of his investigations should be implemented immediately by the owner.

b. The trees and brush should be cleared from the embankment under the guidance of a qualified engineer.

c. A formal surveillance and downstream emergency warning system should be developed for use during periods of heavy or prolonged precipitation.

d. An operation and maintenance manual or plan should be prepared for use as a guide in the operation and maintenance of the dam during normal and emergency conditions.

e. A schedule of regular inspection by a qualified engineer should be developed.

APPROVED BY:
DEPARTMENT OF THE ARMY
BALTIMORE DISTRICT, CORPS OF ENGINEERS

JAMES W. PECK
Colonel, Corps of Engineers
Commander and District Engineer

DATE: 28 JUL 81

ROSNER POND DAM

PHASE I INSPECTION REPORT

NATIONAL DAM INSPECTION PROGRAM

ROSNER POND DAM

NDI ID No. PA 01111

DER ID No. 64-190

SECTION 1

PROJECT INFORMATION

1.1 General

a. Authority. The Dam Inspection Act, Public Law 92-367, authorized the Secretary of the Army, through the Corps of Engineers, to initiate a program of inspection of non-federal dams throughout the United States.

b. Purpose. The purpose of this inspection is to determine if the dam constitutes a hazard to human life and property.

1.2 Description of Project.

a. Description of Dam and Appurtenances. Rosner Pond Dam is an earthfill structure approximately 24.5 feet high and 392 feet in length. There is no spillway facility provided for this dam. A rock culvert, which extends through the embankment at its maximum section, is evaluated as an outlet works for the purposes of this report. The culvert is horseshoe shaped and measures approximately four feet wide by eight feet high. Two 14 inch diameter cast iron pipes are visible from the downstream end of the culvert. These pipes extend an unknown distance into the embankment. A roadway passes over the entire length of the embankment.

Note: The U.S.G.S 7.5 minute Quadrangle Sheet (Aldenville, Pa) indicates a reservoir elevation of 1289.0, which is used as the reference elevation for this report.

b. Location: Clinton Township, Wayne County, Pa.
U.S.G.S. Quadrangle - Aldenville, Pa.
Latitude 41° 39.1'; Longitude 75° 21.2'
Refer to Plates I & II, App. E.

c. Size Classification: Small: Height 24.5 feet, Storage 380 acre feet

d. Hazard Classification: High (Refer to Section 3.1.e)

e. Ownership: Mr. Otis Rosner
Aldenville, Pa 18401

f. Purpose: Recreation

g. Design and Construction History:

No information concerning the design and construction of the dam is known to exist other than a statement by the owner that it was originally built as a holding reservoir for the Delaware and Hudson canal system.

h. Normal Operating Procedure

No formal operating procedures exist. Inflow which exceeds the capacity of the outlet works will be stored until it overflows the low point of the embankment.

1.3 Pertinent Data.

a. Drainage Area (square miles)

From files:	2.20
Computed for this report:	2.26
Use:	2.26

b. Discharge at Damsite (cubic feet per second)

Maximum known flood	unknown
Outlet works with maximum pool (El. 1297.0)	40

c. Elevations (feet above mean sea level)

Top of Dam	
Design	unknown
Existing	1297.0
Normal pool	unknown
Assumed normal pool	1289
Outlet Works	
Upstream invert	unknown
Downstream invert	1273.5
Streambed at toe	1272.5

d. Reservoir Length (feet)

Normal pool	unknown
Assumed normal pool (El. 1289)	2000
Maximum pool (El. 1297.0)	2400

e. Storage (acre-feet)

Normal pool	unknown
Assumed normal pool (El. 1289)	125
Maximum pool (El. 1297.0)	380

f. Reservoir Surface (acres)

Normal pool	unknown
Assumed normal pool (El. 1289)	25
Maximum pool (El. 1297.0)	40

g. Dam

Note: Refer to Appendix A for profile and section

Type	Random earthfill
Length	392 feet
Top Width	13 feet
Height	24.5 feet
Side Slopes	
Upstream	1V:1.6H
Downstream	Varies, 3V:1H for upper 8.5 feet, 1V:0.8H below
Zoning	Unknown
Cutoff	Unknown
Grouting	Unknown

h. Outlet Works

Type	Two 14 inch cast iron pipes discharge into rock culvert
Closure	None observed or reported

SECTION 2

ENGINEERING DATA

2.1 Design.

The available data for Rosner Pond Dam consist of an inventory form and one inspection report provided by PennDER. The dam has only recently been placed on PennDER's inventory. No other data are known to exist.

2.2 Construction.

No information concerning construction of the dam is known to exist.

2.3 Operation.

No formal records of operation or maintenance exist.

2.4 Evaluation.

a. Availability. All available written information was contained in the files provided by PennDER.

b. Adequacy. The available data, including that collected during the recent detailed visual inspection, are considered to be adequate to make a reasonable assessment of the dam.

SECTION 3

VISUAL INSPECTION

3.1 Observations.

a. General. The overall appearance and general condition of the dam and appurtenances are poor. The facility does not have a spillway and the outlet works are clogged with stones. These and other noteworthy deficiencies are discussed below. The visual inspection checklist, field sketch, and profile are provided in Appendix A. Photographs taken during the inspection are reproduced in Appendix C.

The reservoir pool was approximately 13 feet below the top of dam on the day of the inspection. Present during part of the inspection was John Chernesky of the Pennsylvania Department of Environmental Resources (PennDER).

b. Embankment. A dirt road crosses the crest which curves slightly at both ends. Vehicular traffic on this road is causing some rutting and minor erosion of the crest. The crest is low in the center portion and rises toward the abutments. The upstream face slopes at 1V:1.6H above the water. This slope is covered with dumped rock except for the area over the outlet works where it is hand-placed. This hand-placed area, which is about twenty feet wide, appears to be about one foot lower than the adjacent slopes. This depression may have resulted from poor alignment during construction or settlement of the fill. The downstream face slopes at 3V:1H for the upper 8.5 feet and 1V:0.8H below. This entire slope consists of hand-placed stones. Several large trees and some brush are growing on both the upstream and downstream slopes. The junctions of the embankment and the abutments are good. No signs of cracking, sloughing or erosion, except as noted above, are evident.

c. Appurtenant Structures. This facility does not have a spillway. The only appurtenant structure is a rock culvert which passes through the maximum embankment section. This structure is classified as the outlet works for the purposes of this report. The rock culvert is horseshoe-shaped and measures four feet wide by about eight feet high. The hand-placed stones are in fair condition. There is no evidence of movement or distress within the structure; however, this formal culvert extends only about 20 feet into the embankment, as measured from the downstream toe, before ending in a pile of rocks. Two 14 inch cast iron pipes project from the rocks. The pipe on the right is clogged with stones approximately ten feet upstream of the outfall. This pipe is discharging flow to a depth of about 0.2 foot. The pipe on the left is almost completely filled with rocks and discharges only a small amount of flow. It is assumed that these pipes were added sometime after the rock culvert was constructed. Settlement of the rockfill has pushed these pipes sideways and out of line with the culvert. Pieces of broken cast iron pipe are evident within and downstream of the rock pile. No intake structure for these pipes is visible on the upstream side of the dam. Water can be seen entering the rocks and logs on the upstream face of the dam, but the size of the opening could not be determined. It appears that this intake is being progressively blocked with logs and debris deposited by beavers. At the outlet end of the

rock culvert, water is flowing under the rocks at the toe immediately adjacent to the culvert. The discharge channel is the natural stream which is naturally lined with 6-10 inch stone.

d. Reservoir. The partially wooded reservoir slopes are flat to moderately sloping. These slopes appear stable with no potential for massive slides that would seriously affect reservoir storage. Long Pond Dam, DER No. 64-41, is approximately 0.7 mile upstream of Rosner Pond Dam. This structure is currently breached and impounds no water above the natural lake level. Long Pond, a natural lake, is located 100 feet upstream of the breached structure.

e. Downstream Channel. The first 1,000 feet of channel below the dam is confined with moderate slopes. The floodplain area increases slightly in width through the next 1,200 feet. An improved dirt road crosses this unnamed tributary to the West Branch of Lackawaxen River 1,400 feet below the dam. Less than 100 feet beyond this road is one house within 60 feet of the stream. The first floor of this structure is 6 feet above the streambed. The proximity of this structure to the streambed and the dam together with the confined channel above the house creates the potential for the loss of more than a few lives and property damage should the dam fail. A high hazard classification is appropriate for Rosner Pond Dam. Pennsylvania Route 170 crosses the stream 1.2 miles downstream of the dam. The West Branch of the Lackawaxen River is joined 0.1 mile beyond. Approximately 4.7 miles downstream is Prompton Lake Dam, a 140 foot high flood control structure maintained by the U.S. Army Corps of Engineers. Failure of Rosner Pond Dam would not adversely affect this downstream dam.

f. Evaluation. The lack of a spillway and formal outlet works causes concern for the safety of this structure during a flood event. The outlet works needs extensive rehabilitation or replacement in order to provide a reliable means to draw down the lake when needed and to maintain a normal pool. The trees and brush should be removed from the embankment. In addition, a determination of the cause of the apparent depression on the upstream face at the outlet works is required.

SECTION 4

OPERATIONAL PROCEDURES

4.1 Normal Operating Procedure. The facility has essentially no regulating controls or devices. No spillway exists and the two 14-inch outlet pipes found in the rock-arch culvert (see Appendix C) were discharging a small amount of water. No normal pond would be appropriate as outflow from the reservoir is restricted to evapotranspiration and minor flow through the obstructed outlet pipes. All inflow in excess of the outflow capacity of the pipes would be stored until reaching the top of dam. Large volume inflows would overtop the embankment. No formal operations manual exists.

4.2 Maintenance of Dam. The condition of the dam as observed by the inspection team is indicative of a general lack of maintenance. The embankment has heavy tree growth on both the upstream and downstream faces. Vehicular traffic has rutted the crest of the embankment. No formal maintenance manual exists.

4.3 Maintenance of Operating Facilities. The outlet pipes are partially obstructed and thereby are prevented from operating as intended.

4.4 Warning System. No formal warning system exists.

4.5 Evaluation. No spillway exists at the facility. This condition raises a serious concern for the safety of the dam during a flood event. A spillway should be provided to prevent flows from overtopping the embankment. The outlet works should be made fully operational. Formal manuals of maintenance and operation are recommended to ensure that all needed maintenance is identified and performed regularly. In addition, a formal warning system for the protection of downstream inhabitants should be developed. Included in the plan should be provisions for around-the-clock surveillance of the facility during periods of unusually heavy precipitation.

SECTION 5

HYDROLOGIC/HYDRAULIC EVALUATION

5.1 Design Data. No formal design reports, drawings or calculations are known to exist for the facility.

5.2 Experience Data. Records of reservoir levels and/or spillway discharges are not available. No records of performance are available.

5.3 Visual Observations. On the date of the inspection, two major problems were observed that would prevent the facility from operating safely during a flood event. As noted in Section 4, no spillway exists at the facility. This condition raises a serious concern for the safety of the dam during a flood event. Also, the outlet pipes in the culvert are severely obstructed and are greatly reduced in capacity. Since no spillway is provided at the facility, large volume inflow would exceed the capacity of the outlets, fill the storage to top of dam, and overtop the embankment. See Appendix C for photographs of the outlet pipes, rock arch culvert, and overview pictures of the embankment.

5.4 Method of Analysis. The facility has been analyzed in accordance with procedures and guidelines established by the U.S. Army Corps of Engineers, Baltimore District, for Phase I hydrologic and hydraulic evaluations. This analysis has been performed using a modified version of the HEC-1 computer program developed by the U.S. Army Corps of Engineers, Hydrologic Engineering Center, Davis, California. Capabilities of the program are briefly outlined in the preface contained in Appendix D.

5.5 Summary of Analysis.

a. Spillway Design Flood (SDF). In accordance with the procedures and guidelines contained in the National Guidelines for Safety Inspection of Dams for Phase I Investigations, the SDF for Rosner Pond Dam ranges between the $1/2$ Probable Maximum Flood (PMF) and the full PMF. This classification is based on the relative size of the dam (small) and the potential hazard of failure to downstream development (high). Due to the small storage (380 ac-ft) and small height (24.5 feet), the SDF selected was the $1/2$ PMF.

b. Results of the Analysis. Rosner Pond Dam was evaluated under near normal operating conditions. Based on tree line growth and debris deposited in the lake, it was assumed that the starting lake elevation during a flood event would be elevation 1289. For this study the outlet works was assumed blocked. Since the facility has no spillway, runoff would be stored in the lake until the embankment was overtopped.

Spillway Capacity at Top of Dam	0 cfs
SDF ($1/2$ PMF) peak inflow	2100 cfs
Available Storage - Inches of Runoff	2.2 inches

The overtopping analysis (using HEC-1DB) indicated that the storage capacity of Rosner Pond Dam is 11% of the PMF prior to overtopping the embankment. Under one-half PMF conditions, the dam is overtopped for 8.3

hours to a maximum height of 2.2 feet. Since the SDF for this dam is one-half PMF, it can be concluded that Rosner Pond Dam has a high potential for overtopping, and thus, for breaching by floods of less than SDF magnitude.

To determine if the spillway is seriously inadequate, these conditions must be met:

(i) These is a high hazard to loss of life from large flows downstream of the dam.

(ii) The spillway is not capable of passing one-half PMF without overtopping the dam and causing failure.

(iii) Dam failure resulting from overtopping would significantly increase the hazard to loss of life downstream of the dam from that which would exist just before overtopping.

Since Rosner Pond Dam meets the first two conditions, the third condition must be evaluated and; therefore, a breach analysis was performed.

The modified HEC-1 computer program was used for the breaching analysis. It was assumed that the dam could withstand up to 0.5 foot of overtopping for short durations. The water surface elevation selected to cause failure was elevation 1297.5.

Four breach models were analyzed under conditions that would approximate 0.5 foot of overtopping. The flood selected to cause breaching was 13% of the PMF. Plan 1 was a non-breach analysis used to provide a means of direct comparison between failure and non-failure conditions at downstream locations for the same flood event. Failure times in the three remaining plans were 0.33 hr (Plan 2), 1.00 hr (Plan 3), and 2.00 hrs (Plan 4). Downstream damage elevations and locations are shown in Appendix D and E of this report. Page D-11 of Appendix D provides peak outflows and changes in stage at downstream damage centers. As indicated in the table, failure conditions significantly increase the hazard to loss of life when compared to non-failure conditions. Breach geometry and location are also discussed in Appendix D.

5.6 Spillway Adequacy. Under existing conditions Rosner Pond Dam can accommodate 11% of the PMF prior to overtopping the embankment. Should an event in excess of this occur, the dam would be overtopped and could possibly fail. Since the failure of this dam would significantly increase the hazard to loss of life and property damage at the existing downstream residence, the flood discharge capacity is considered to be seriously inadequate.

SECTION 6

STRUCTURAL STABILITY

6.1 Evaluation of Structural Stability

a. Visual Observations

(1) Embankment. Visual observations of Rosner Pond Dam indicate that the dam is in poor condition. The 24.5 foot high embankment is constructed of random fill. It has dry laid stone on the downstream slope and dumped stone on the upstream slope, except at the outlet works where the stone is hand placed. The left end of the upstream slope is not protected by riprap; however, erosion is not a problem. Brush and several large trees are growing on the embankment. No seepage was observed. The embankment slopes are steep; however, no signs of instability were noted.

(2) Appurtenant Structures. Rosner Pond Dam has no spillway. It appears that the dam was originally built as a road embankment with a hand placed arched-rock culvert at the base of the embankment. The rock culvert is judged to be sound; no signs of instability or deterioration were observed. Two cast iron pipes, estimated to be 14 inches in diameter, discharge into the upstream end of the culvert approximately 4.5 feet above the base. Apparently, the function of these pipes is to regulate the lake elevation. However, it could not be determined if the pipes have an upstream cutoff. The flow through these pipes is restricted enough that the lake elevation is usually about 5 feet higher than it was the day of the inspection.

b. Design and Construction Data

(1) Embankment. None.

(2) Appurtenant Structures. None.

c. Operating Records. None.

d. Post Construction Changes. No information exists to determine if changes were made. It appears that the dam was constructed as a road embankment as noted in 6.1a(2) and later was used as a dam.

e. Seismic Stability. The dam is located in Seismic Zone 1. Based on visual observations, it is statically stable. Therefore, the seismic stability is considered adequate.

SECTION 7

ASSESSMENT AND RECOMMENDATIONS

7.1 Dam Assessment.

a. Safety. The visual inspection and review of available data indicate that Rosner Pond Dam is in poor condition. The lack of a spillway and the poor condition of the outlet works are the primary deficiencies which cause concern for the safety of this facility. In accordance with the recommended guidelines, the spillway design flood (SDF) for this facility is in the range of 1/2 PMF to full PMF. Based on the size of the dam and degree of downstream hazard, the selected SDF is the 1/2 PMF.

The hydrologic and hydraulic computations indicate that the combination of reservoir storage and outlet works discharge capacity will not pass the SDF (1/2 PMF) prior to overtopping the embankment. Under present conditions, the discharge/storage capacity is 11% of the PMF prior to overtopping. In accordance with the criteria outlined and evaluated in Section 5.5, the discharge capacity for Rosner Pond Dam is considered to be seriously inadequate. The dam in its present condition is considered to be unsafe, non-emergency.

b. Adequacy of Information. The data contained in PennDER files, in conjunction with data collected during the recent visual inspection, are considered to be adequate for making a reasonable assessment of this dam.

c. Urgency. The recommendations presented below should be implemented immediately.

d. Necessity for Additional Studies. The results of this inspection indicate a need for additional studies by a qualified professional engineer to perform a detailed hydrologic and hydraulic analysis for the purpose of providing an adequate discharge capacity for this dam.

7.2 Recommendations.

a. The owner should immediately retain a qualified professional engineer experienced in dam design and construction to perform a detailed hydrologic and hydraulic analysis of the dam for the purpose of determining measures required to provide an adequate discharge capacity. The existing outlet works should be evaluated by the engineer as part of this study. Remedial measures recommended by the engineer at the conclusion of his investigations should be implemented immediately by the owner.

b. The trees and brush should be cleared from the embankment under the guidance of a qualified engineer.

c. A formal surveillance and downstream emergency warning system should be developed for use during periods of heavy or prolonged precipitation.

d. An operation and maintenance manual or plan should be prepared for use as a guide in the operation and maintenance of the dam during normal and emergency conditions.

e. A schedule of regular inspection by a qualified engineer should be developed.

APPENDIX A

CHECKLIST - VISUAL INSPECTION

Check List
Visual Inspection
Phase I

Name Dam Rosner Pond DER ID No. 64-190 County Wayne State Pennsylvania

Date(s) Inspection 25 Mar 81 Weather Cloudy Temperature 40°

Pool Elevation at Time of Inspection 1284 M.S.L. Tailwater at Time of Inspection 1273 M.S.L.

Inspection Personnel:

J. Bianco, C.O.E.
E. Hecker, C.O.E.
B. Cortright, C.O.E.
J. Chernesky, PennDER
J. Evans, C.O.E.

B. Cortright Recorder

EMBANKMENT

VISUAL EXAMINATION OF	OBSERVATIONS
Any Noticeable Seepage	None.
Junction of Embankment with:	
Abutments	Abutments - Good
Spillway	Spillway - None
Surface Cracks	None.
Crest Alignment:	
Vertical	Vertical - Low in middle; rises toward abutments
Horizontal	Horizontal - Fair; curves near both ends
Unusual Movement or Cracking at or beyond the toe	None.

EMBANKMENT

VISUAL EXAMINATION OF	OBSERVATIONS
Sloughing or Erosion:	
Embankment Crest/Slopes	Minor erosion of crest due to vehicular traffic.
Abutment Slopes	
Riprap	Dumped rock on upstream slope except hand placed at culvert area. Hand placed on downstream face.
Staff Gage and Recorder	None.
Instrumentation	None.
Miscellaneous	Trees on u/s and d/s slopes.

OUTLET WORKS

VISUAL EXAMINATION OF	OBSERVATIONS
Intake Structure	None. Water seen flowing into rocks and logs below waterline; in line with conduit
Outlet Conduit	Two 14 inch cast iron pipes in poor condition and blocked with rocks on upstream portion. Pipes discharge into rock culvert in fair condition. Flowing 0.5 foot deep.
Outlet Structure	Portal of rock culvert; fair condition.
Emergency Gate	None observed or reported.
Outlet Channel	Original streambed; natural rock and earth bottom. No obstructions

SPILLWAY

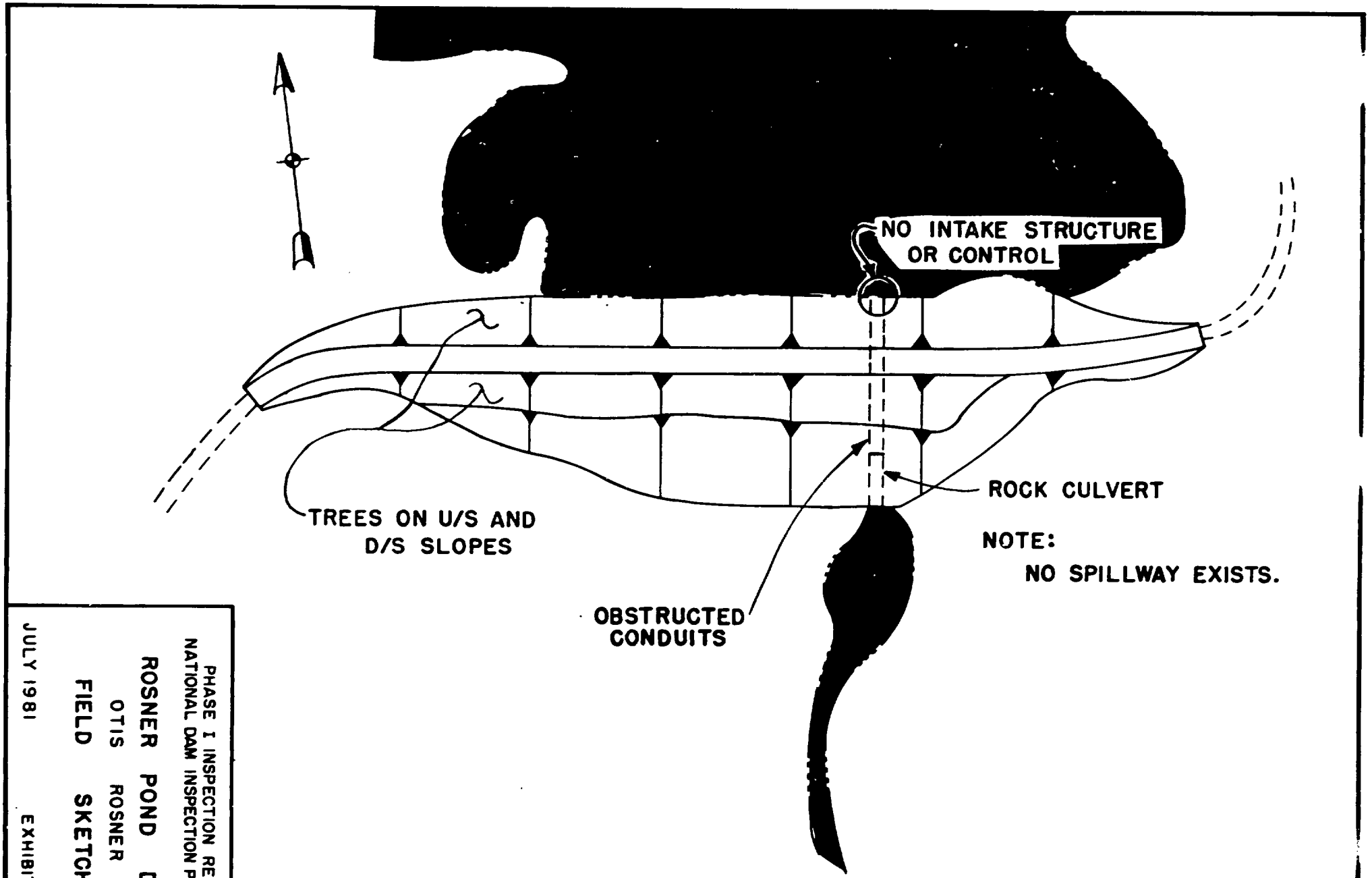
VISUAL EXAMINATION OF	OBSERVATIONS
Approach Channel	N/A
Weir	Dam does not have a spillway.
Bridge and Piers	None.
Discharge Channel	N/A

RESERVOIR

VISUAL EXAMINATION OF	OBSERVATIONS
Slopes	Slopes are moderate and wooded. Appear stable.
Sedimentation	None apparent.

DOWNSTREAM CHANNEL

VISUAL EXAMINATION OF	OBSERVATIONS
Condition: Obstructions, Debris, etc.	Improved dirt road crosses stream 1,500 feet below dam. Pa. Route 170 is 1.2 miles d/s. Joins W. Branch Lackawaxen River 1.3 miles from dam. Prompton Lake Dam 4.7 miles d/s.
Slopes	Moderate channel slope. Moderate to steep side slopes.
Approximate Number of Homes	One home 1,600 feet below dam; within 50 feet of channel. First floor 6 feet above streambed.



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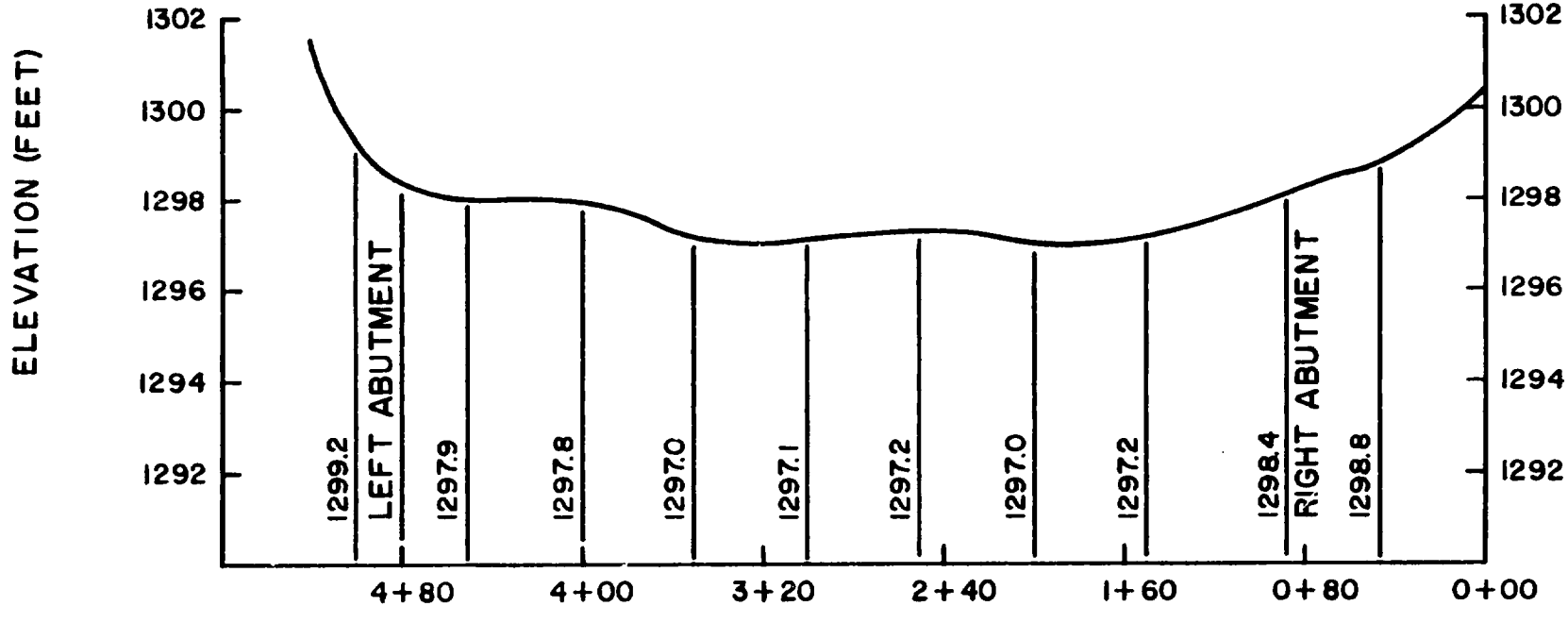
ROSNER POND DAM

OTIS ROSNER

FIELD SKETCH

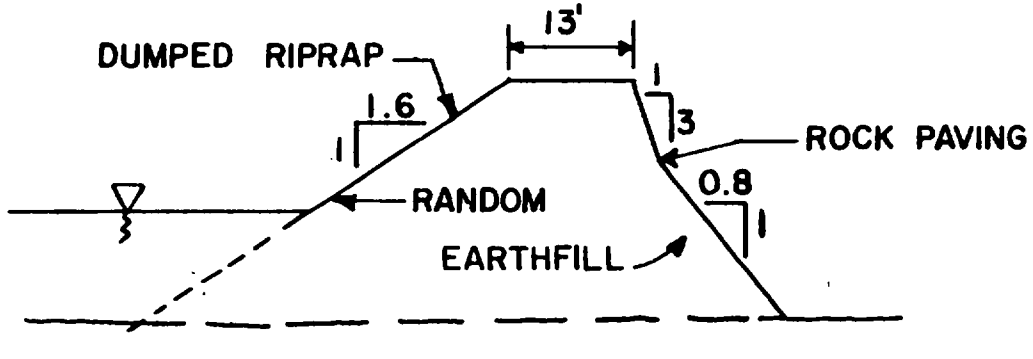
JULY 1981

EXHIBIT A-1



TOP OF DAM - PROFILE

SCALE - HORIZ.: 1 IN. = 80 FT.
VERT.: 1 IN. = 4 FT.



SECTION

SCALE 1 IN = 20 FT.

PHASE I INSPECTION REPORT
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OTIS ROSNER

PROFILE AND SECTION

JULY 1981

EXHIBIT A-2

APPENDIX B

CHECKLIST - ENGINEERING DATA

Check List
Design, Construction, Operation
Phase I

ITEM	REMARKS
As-built Drawings	None.
Regional Vicinity Map	U.S.G.S. Quadrangle - Aldenville, PA, 7 1/2 minute quad sheet. See Appendix E, Plate E-II.
Construction History	No data available.
Typical Sections of Dam	None.
Outlets - Plan Detail Constraints Discharge Ratings	No data. Two 14" cast iron pipes are means of regulating pool level, which are contained within a rock culvert.
Rainfall/Reservoir Records	None.

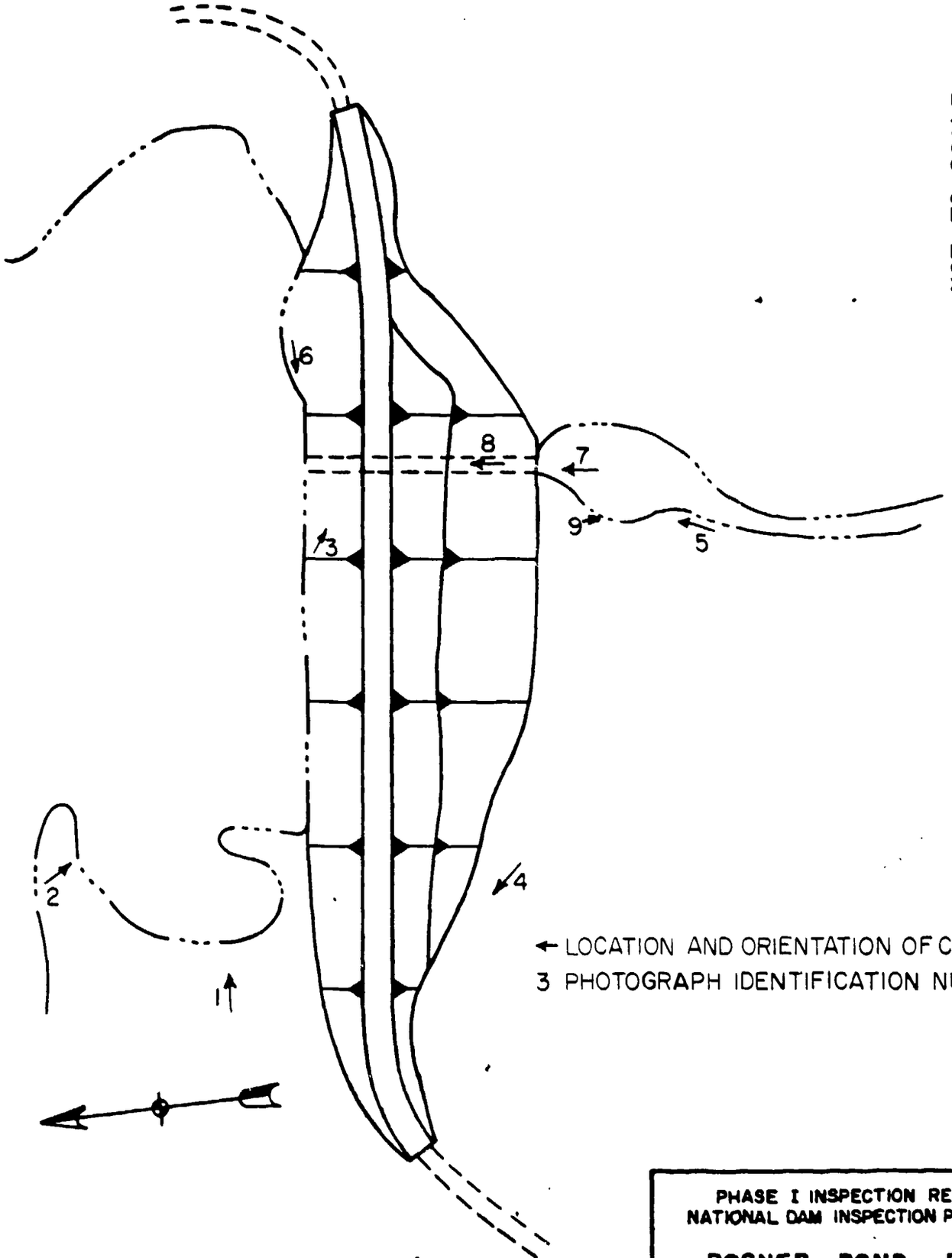
ITEM	REMARKS
Design Reports	None.
Geology Reports	None.
Design Computations Hydrology & Hydraulics Dam Stability Seepage Studies	None.
Materials Investigations Boring Records Laboratory Field	None.
Post-Construction Surveys of Dam	No data exists to determine if post construction changes have been made.
Borrow Sources	No data.

ITEM	REMARKS
Monitoring Systems	None.
Modifications	No data exists to determine if changes have been made.
High Pool Records	None.
Post-Construction Engineering Studies and Reports	None.
Prior Accidents or Failure of Dam Description Reports	N/A.
Maintenance Operation Records	None.

ITEM	REMARKS
Spillway Plan Sections Details	N/A.
Operating Equipment Plans & Details	N/A.
Specifications	No data.
Miscellaneous	Inspection reports by PennDer in July 1972.

APPENDIX C

PHOTOGRAPHS



← LOCATION AND ORIENTATION OF CAMERA
3 PHOTOGRAPH IDENTIFICATION NUMBER

NOT TO SCALE

PHASE I INSPECTION REPORT
NATIONAL DAM INSPECTION PROGRAM

ROSNER POND DAM

OTIS ROSNER

PHOTOGRAPH LOCATION PLAN

JULY 1981 EXHIBIT C-1

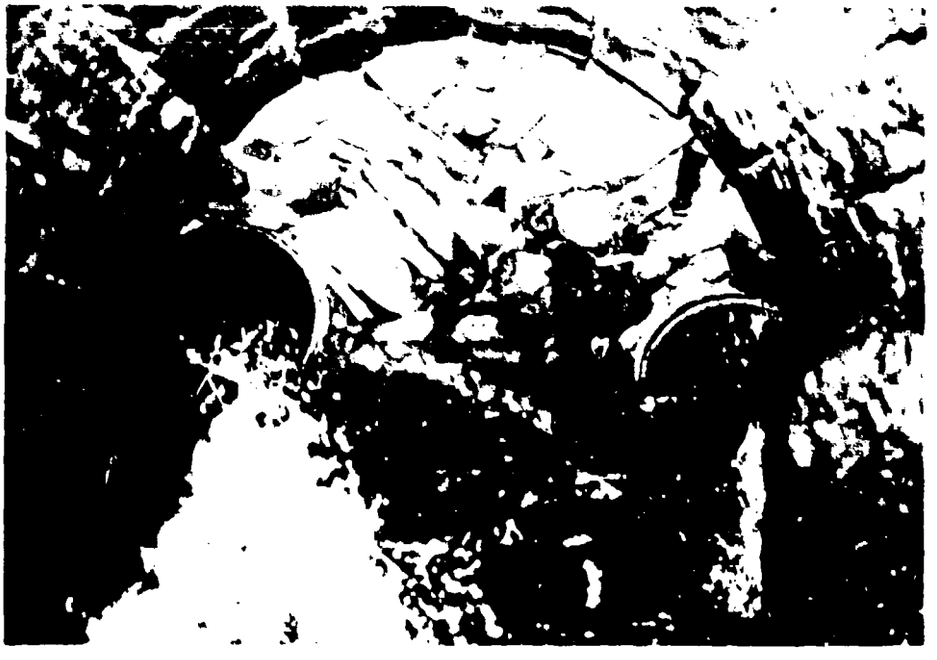
[illegible]

[illegible]

5. Downstream face at center of dam.

6. Location of upstream face where water is entering embankment. (Apparent source of culvert discharge)

[illegible]



8. Rock fill and cast iron pipe at [illegible]

9. Downstream dam ~ 1300 feet beyond toe.

10. Downstream hazard. Streambed in foreground.

APPENDIX D

HYDROLOGY AND HYDRAULICS

PREFACE

The modified HEC-1 program is capable of performing two basic types of hydrologic analyses: 1) the evaluation of the overtopping potential of the dam; and 2) the estimation of the downstream hydrologic-hydraulic consequences resulting from assumed structural failures of the dam. Briefly, the computational procedures typically used in the dam overtopping analysis are as follows:

a. Development of an inflow hydrograph(s) to the reservoir.

b. Routing of the inflow hydrograph(s) through the reservoir to determine if the event(s) analyzed would overtop the dam.

c. Routing of the outflow hydrograph(s) from the reservoir to desired downstream locations. The results provide the peak discharge(s), time(s) of the peak discharge(s), and the maximum stage(s) of each routed hydrograph at the downstream end of each reach.

The evaluation of the hydrologic-hydraulic consequence resulting from an assumed structural failure (breach) of the dam is typically performed as shown below.

a. Development of an inflow hydrograph(s) to the reservoir.

b. Routing of the inflow hydrograph(s) through the reservoir.

c. Development of a failure hydrograph(s) based on specified breach criteria and normal reservoir outflow.

d. Routing of the failure hydrograph(s) to desired downstream locations. The results provide estimates of the peak discharge(s), time(s) to peak and maximum water surface elevations of failure hydrographs for each location.

HYDROLOGY & HYDRAULIC ANALYSIS
DATA BASE

NAME OF DAM: ROSNER POND DAM

PROBABLE MAXIMUM PRECIPITATION (PMP) = 21.5 INCHES/24 HOURS (1)

DELAWARE RIVER BASIN

STATION	1	2	3
STATION DESCRIPTION	ROSNER POND DAM		
DRAINAGE AREA (SQUARE MILES)	2.26		
CUMULATIVE DRAINAGE AREA (SQUARE MILES)	2.26		
ADJUSTMENT OF PMF FOR (1) 6 Hours 12 Hours 24 Hours 48 Hours 72 Hours	ZONE 1 111 123 133 142		
SNYDER HYDROGRAPH PARAMETERS Zone (2) C_p (3) C^p (3) L^t (MILES) (4) L_{ca} (MILES (4) $tp = C_t (L \cdot L_{ca})$ 0.3 (HOURS)	 1 0.45 1.23 3.37 1.80 2.11		
SPILLWAY DATA CREST LENGTH (FEET) FREEBOARD (FEET)	N/A		

(1) HYDROMETEOROLOGICAL REPORT - 33, U. S. Army Corps of Engineers, 1956, AND U.S. WEATHER BUREAU.

(2) Hydrologic zone defined by Corps of Engineers, Baltimore District, For Determination of Snyder Coefficients (C_p and C_t).

(3) Snyder Coefficients

(4) L = Length of longest watercourse from dam to basin divide.
L_{ca} = Length of longest watercourse from dam to point opposite basin centroid.

BALTIMORE DISTRICT, CORPS OF ENGINEERS PAGE

SUBJECT DAM SAFETY ANALYSIS

COMPUTATIONS ROSNER POND DAM SHEET 1 OF SHEETS

COMPUTED BY JMB CHECKED BY DATE 4-22-81

DAM CLASSIFICATION :

SIZE OF DAM	-	SMALL
HAZARD	-	HIGH
REQUIRED SDF	-	1/2 PMF TO FULL PMF

DAM STATISTICS :

HEIGHT OF DAM	-	24.5 FEET
STORAGE AT NORMAL POOL	-	undetermined
STORAGE AT TOP OF DAM	-	380 AC-FT
DRAINAGE AREA ABOVE DAMSITE	-	2.26 mi^2

ELEVATIONS : (MSL)

TOP OF DAM LOW POINT (FIELD)	-	1297.0
NORMAL POOL	-	UNDETERMINED
STREAMBED AT TOE	-	1272.5

HYDROGRAPH PARAMETERS :

RIVER BASIN - DELEWARE RIVER BASIN

ZONE - 1

SNYDER COEFFICIENTS :

C_p = 0.45

C_t = 1.23

MEASURED PARAMETERS :*

L = LENGTH OF LONGEST WATERCOURSE — L = 17,800 ft. L = 3.37 miles

L_{CA} = LENGTH OF LONGEST WATERCOURSE TO CENTROID OF THE BASIN — L_{CA} = 9500 ft. L_{CA} = 1.80 miles

*- FROM U.S.G.S. QUAD SHEET ENTITLED ALDENVILLE, PA. 7½ MINUTE SERIES, SCALE 1:24000

MADD FORM 1232, 28 MAR 74

BALTIMORE DISTRICT, CORPS OF ENGINEERS PAGE

SUBJECT DAM SAFETY ANALYSIS

COMPUTATIONS ROSNER POND DAM SHEET 2 OF SHEETS

COMPUTED BY GPB CHECKED BY DATE 4-22-81

NOTE: ELEVATIONS ARE REFERENCED TO TOPOGRAPHIC DATA IN AREA OF EMBANKMENT. CONTOUR LINES IN VICINITY OF DAM INDICATE TOP OF DAM VERY CLOSE TO ELEVATION 1300.0. ASSUME STARTING POOL AT ELEVATION 1289 AS GIVEN ON QUAD SHEET.

t_p = SYNDERS BASIN LAGTIME

$$t_p = C_t (L L_{CA})^{0.3}$$

$$= 1.23 \, (3.37 \, (1.80))^{0.3} = 2.11 \text{ HOURS}$$

RESERVOIR CAPACITY:

- SURFACE AREA AT STARTING POOL (1289) - 25 ACRES (FROM QUAD SHEET)
- SURFACE AREA AT ELEVATION (1300) - 50 ACRES

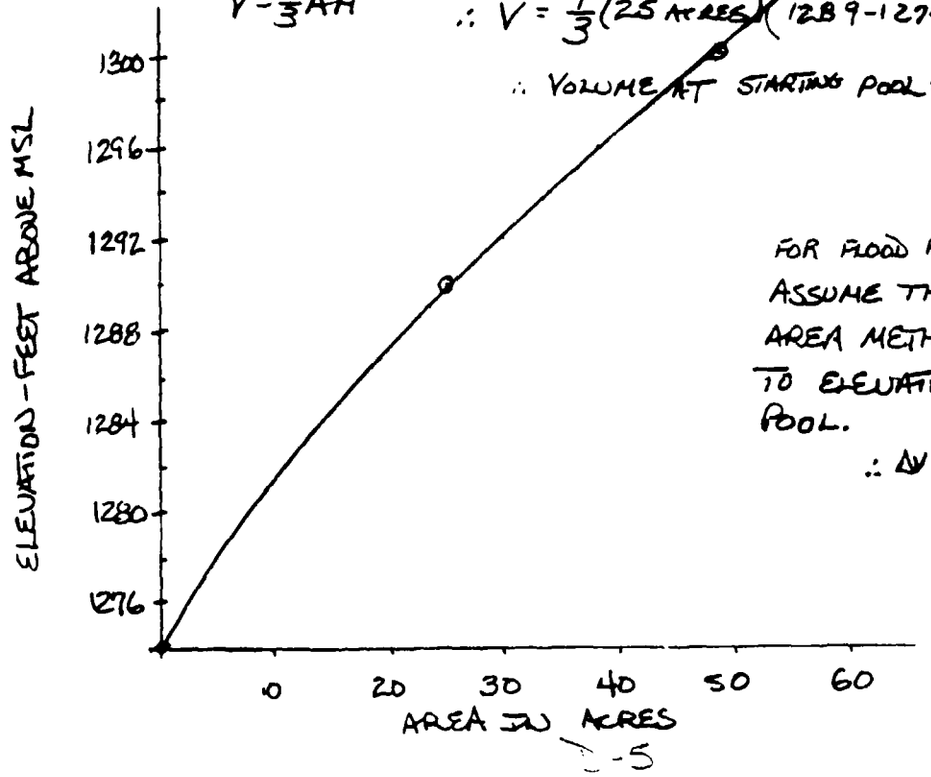
ASSUME CONICAL METHOD APPLIES TO FIND LOW POINT IN POOL, BELOW STARTING POOL

VOLUME AT STARTING POOL - TO BE COMPUTED

ASSUME BOTTOM OF POOL AT ELEVATION 1274.0

$V = \frac{1}{3} AH$ $\therefore V = \frac{1}{3}(25 \text{ ACRES})(1289 - 1274 \text{ ft}) = 125$ AC-FT

$\therefore$ VOLUME AT STARTING POOL = 125 AC-FT



FOR FLOOD ROUTING PURPOSES ASSUME THE AVERAGE END AREA METHOD IS SUITABLE TO ELEVATIONS ABOVE STARTING POOL.

$$\therefore \Delta V = \left(\frac{A_1 + A_2}{2}\right) \Delta H$$

NADB FORM 1232, 28 MAR 74

BALTIMORE DISTRICT, CORPS OF ENGINEERS — PAGE

SUBJECT DAM SAFETY ANALYSIS

COMPUTATIONS ROSNER POND DAM — SHEET 3 OF ____ SHEETS

COMPUTED BY JPB — CHECKED BY ____ — DATE 4-28-81

ELEVATION - STORAGE TABLE:

ELEVATION (MSL)	AREA (ACRES)	ΔH (FT)	$\Delta V = \left(\frac{A_1 + A_2}{2}\right) \Delta H$ (AC-FT)	CUMULATIVE VOLUME (AC-FT)
1274	0	-	0	0
1289	25	-	125	125
1290	27	1	26	151
1292	30	2	57	208
1294	34	2	64	272
1296	38	2	72	344
1297 *(TOD)	40	1	39	383
1298	43	1	41.5	424.5
1300	50	2	93	517.5
1305	64	5	285	802.5

NOTE DRAINAGE AREA ABOVE DAM IS 226 mi².

ELEVATION (MSL)	STORAGE (AC-FT)
1274	0
1289	125
1290	150
1292	210
1294	270
1296	340
1297 (TOD)	380
1298	420
1300	520
1305	800

↑ ROUNDED VALUES

THIS DATA TO BE INPUT ON H & Y5 CARDS.

*(TOD) - TOP OF DAM

NADB FORM 1232, 28 MAR 74

BALTIMORE DISTRICT, CORPS OF ENGINEERS PAGE

SUBJECT DAM SAFETY ANALYSIS

COMPUTATIONS ROSNER POND DAM SHEET 4 OF SHEETS

COMPUTED BY JPB CHECKED BY DATE 4-23-81

PMP CALCULATIONS:

- APPROXIMATE RAINFALL INDEX = 21.5 INCHES (CORRESPONDS TO A DURATION OF 24 HOURS AND A DRAINAGE AREA OF 200 mi^2)
- DELAWARE RIVER BASIN
- DEPTH-AREA-DURATION ZONE 1 : FROM HYDROMET #33
- RECALL DRAINAGE AREA = 2.26 mi^2

DURATION	PERCENT OF INDEX RAINFALL
6	111
12	123
24	133
48	142

NOTE: HOP BROOK FACTOR IS INTERNALLY COMPUTED BY THE HECIDB PROGRAM. FOR A DRAINAGE AREA OF 2.26 mi^2 THE ADJUSTMENT FACTOR = 0.80. THIS ADJUSTMENT IS FOR BASIN SHAPE AND FOR THE LESSER LIKLEHOOD OF A SEVERE STORM CENTERING OVER A SMALL BASIN.

THE ABOVE VALUES ASSUME THE VALUES CORRESPONDING TO A 10 mi^2 AREA MAY BE APPLIED TO THIS AREA.

SDF: BASED ON THE HEIGHT OF DAM (23.5 FEET) AND THE STORAGE (380 AC-FT) THE SDF SELECTED FOR THIS DAM IS ½ THE PROBABLE MAXIMUM FLOOD (PMF).

NADB FORM 1232, 26 MAR 74

EMERGENCY SPILLWAY CAPACITY:

SINCE THERE IS NO FORMAL SPILLWAY STRUCTURE THERE ARE NO CALCULATIONS. THE ENTIRE DAM ACTS AS A BROAD-CRESTED WEIR AND IS COMPUTED IN THE FOLLOWING SECTION.

EMBANKMENT RATING CURVE:

THIS ANALYSIS ASSUMES THAT THE EMBANKMENT BEHAVES AS A BROAD-CRESTED WEIR IF OVERTOPPING OCCURS. DISCHARGE CAN BE ESTIMATED BY:

$$Q = CL_1 H_W^{3/2}$$

WHERE:

Q = DISCHARGE OVER EMBANKMENT, IN CFS
L_1 = LENGTH OF EMBANKMENT, OVERFLOW IN FEET
H_W = WEIGHTED HEAD IN FEET, AVERAGE FLOW AREA WEIGHTED ABOVE LOW POINT OF DAM
C = COEFFICIENT OF DISCHARGE

$C = 2.85$ from VARNELL & WAGLER FOR BROAD-CRESTED WEIR

LENGTH OF EMBANKMENT INUNDATED VS. RESERVOIR ELEVATION:

RESERVOIR ELEVATION (MSL)	EMBANKMENT LENGTH (FT)
1297	0
1298	300
1299	392 *
1300	392 *
1305	392 *
1310	392 *

* MAXIMUM LENGTH OF EMBANKMENT. DOES NOT INCLUDE FLOW OVER OVERBANKS.

NADB FORM 1232, 28 MAR 74

BALTIMORE DISTRICT, CORPS OF ENGINEERS PAGE

SUBJECT DAM SAFETY ANALYSIS

COMPUTATIONS ROSNER POND DAM SHEET 6 OF SHEETS

COMPUTED BY JPB CHECKED BY DATE 4-29-81

EMBANKMENT RATING TABLE:

$C = 2.85$

RESERVOIR ELEVATION (MSL)	L_1 (ft)	L_2 (ft)	INCREMENTAL HEAD, H_i (ft)	① INCREMENTAL FLOW AREA, A_i (ft^2)	TOTAL FLOW AREA, A_T (ft^2)	② WEIGHTED HEAD, H_W (ft)	③ Q (CFS)
1297	0	-	—	—	—	—	0
1298	300	0	1.0	150	150	0.50	302
1299	392	300	1.0	346	496	1.29	1598
1300	392	392	1.0	392	888	2.29	3820
1305	392	392	5.0	1960	2848	7.26	21854
1310	392	392	5.0	1960	4808	12.26	47960

① $A_i = H_i [(L_1 + L_2)/2]$

② $H_W = A_T / L$

③ $Q = C L \cdot H_W^{3/2}$

TOTAL FACILITY RATING CURVE:

RESERVOIR ELEVATION (MSL)	$Q_{SPILLWAY}$ (CFS)	$Q_{EMBANKMENT}$ (CFS)	Q_{TOTAL} (CFS)
1297	0	0	0
1298	0	300	300
1299	0	1600	1600
1300	0	3820	3820
1305	0	21900	21900
1310	0	48000	48000

THE ABOVE VALUES WILL BE INPUT ON Y4 & Y5 CARDS.

NADB FORM 1232, 28 MAR 74

BALTIMORE DISTRICT, CORPS OF ENGINEERS PAGE _____

SUBJECT DAM SAFETY ANALYSIS

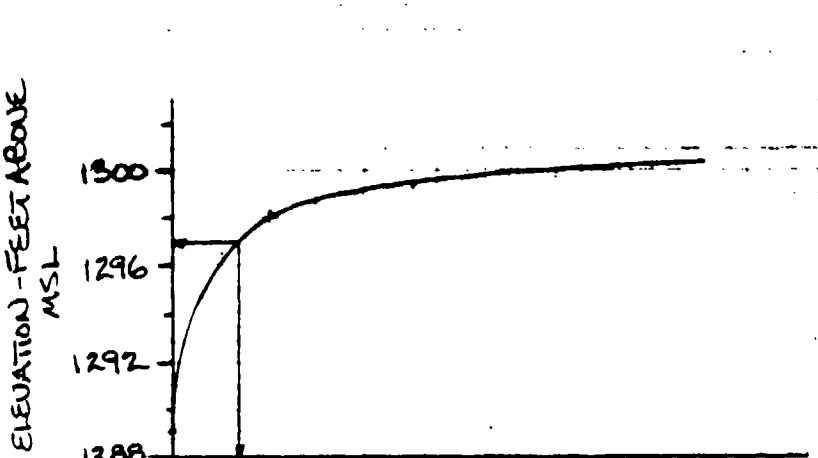
COMPUTATIONS ROSNER POND DAM SHEET 7 OF _____ SHEETS

COMPUTED BY GPB CHECKED BY _____ DATE 4-29-81

RESULTS OF OVERTOPPING ANALYSIS:

FROM PAGE A- , THE FOLLOWING CURVE CAN BE DRAWN FROM THE SUMMARY TABLE OF THIS APPENDIX.

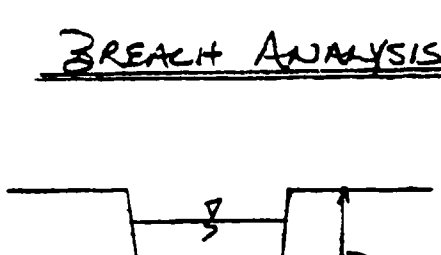
TOP OF DAM IS AT ELEVATION 1297.0



ROSNER POND DAM CAN PASS 11% OF THE PMF PRIOR TO OVERTOPPING THE EMBANKMENT.

THIS FACILITY CAN CONTROL 11% OF THE PMF. AT THE SDF (½PMF) THE DAM IS OVERTOPPED TO A MAXIMUM HEIGHT OF 2.2 FEET FOR A TOTAL DURATION OF ~8.3 HOURS. SINCE IT IS FELT THAT AT 50% OF THE PMF, THE DAM WOULD FAIL DUE TO OVERTOPPING; THEREFORE, A BREACH ANALYSIS IS REQUIRED.

BREACH ANALYSIS:



RUN BREACH AT ~0.5 FEET OF OVERTOPPING - FAILURE ELEVATION AT 1297.5, SO USE FLOOD OF ~ 13% PMF.

NADB FORM 1232, 26 MAR 74

BALTIMORE DISTRICT, CORPS OF ENGINEERS PAGE

SUBJECT DAM SAFETY ANALYSIS

COMPUTATIONS ROSNER POND DAM SHEET 8 OF SHEETS

COMPUTED BY JPB CHECKED BY DATE 5-1-81

HECIAB INPUT PARAMETERS FOR BREACH ANALYSIS

FOUR RUNS WILL BE USED FOR A DIRECT COMPARISON OF FAILURE VS. NON-FAILURE CONDITIONS. PLAN 1 WILL BE A NON FAILURE PLAN, ALL OTHERS ASSUME FAILURE.

PLAN NUMBER	BREACH BOTTOM WIDTH (FT)	FULL BREACH DEPTH (FT)	SIDESLOPES (H on V)	TOTAL BREACH TIME (HRS)
1		non-failure plan		
2	75	17.5	1H on 1V	0.33
3	75	17.5	1H on 1V	1.00
4	75	17.5	1H on 1V	2.00

HECIAB OUTPUT:

RESULTS OF BREACH ANALYSIS. AS NOTED ABOVE PLAN 1 IS A NON-FAILURE FOR DIRECT COMPARISON.

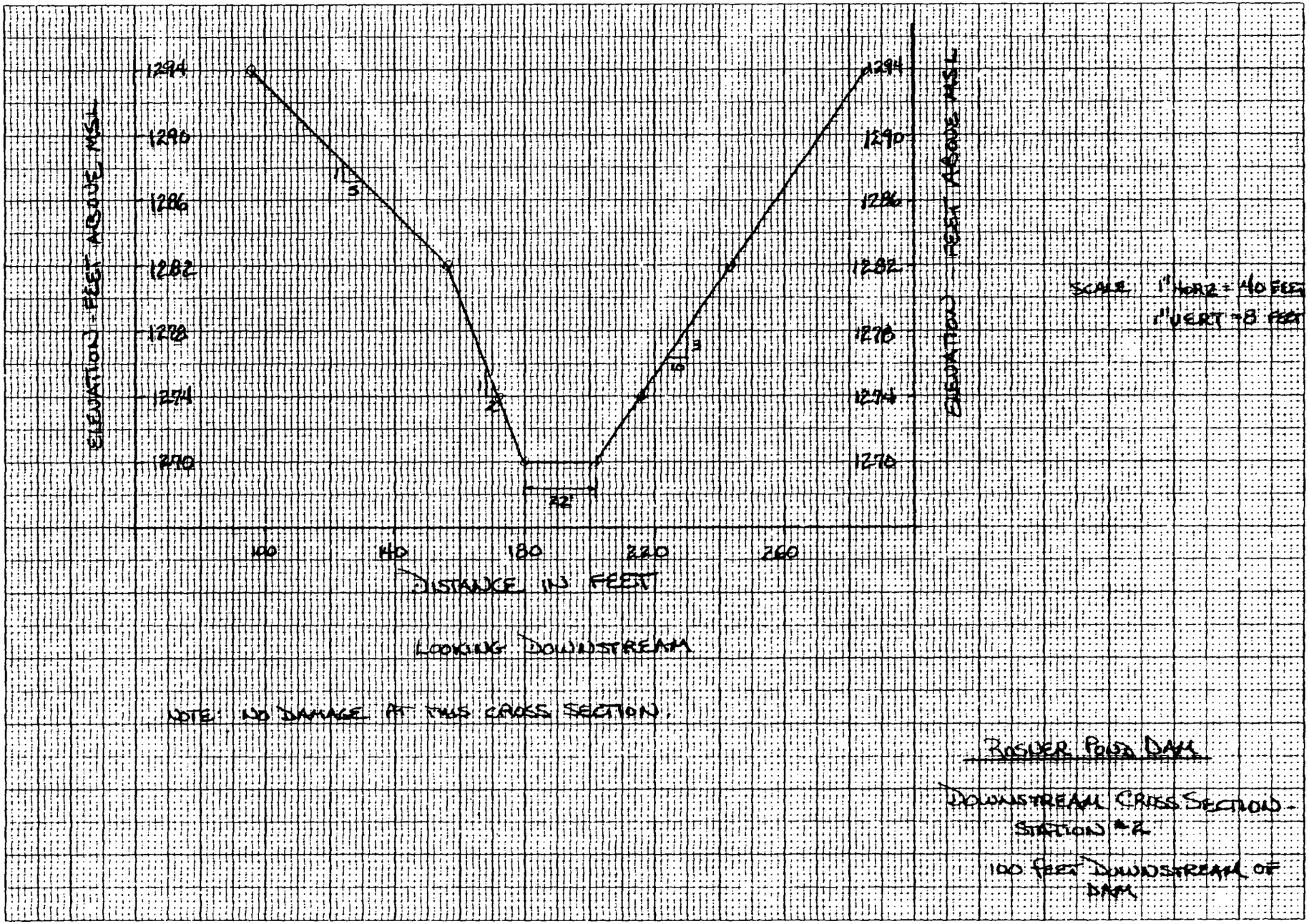
PLAN NUMBER	MAXIMUM OUTFLOW OVERDAM AND/OR THRU BREACH (CFS)	DOWNSTREAM DAMAGE CENTER #1 STAGE (MSL)	FLOW (CFS)
1	160	1245.5	160
2	13900	1253.7	11400
3	7260	1252.0	7230
4	2610	1249.0	2430

DAMAGE AT DOWNSTREAM CENTER - 1250.0

NADB FORM 1232, 28 MAR 74

NO. 340-10¼ DIETZGEN GRAPH PAPER
10 X 10 PER HALF INCH

DIETZGEN CORPORATION
MADE IN U.S.A.



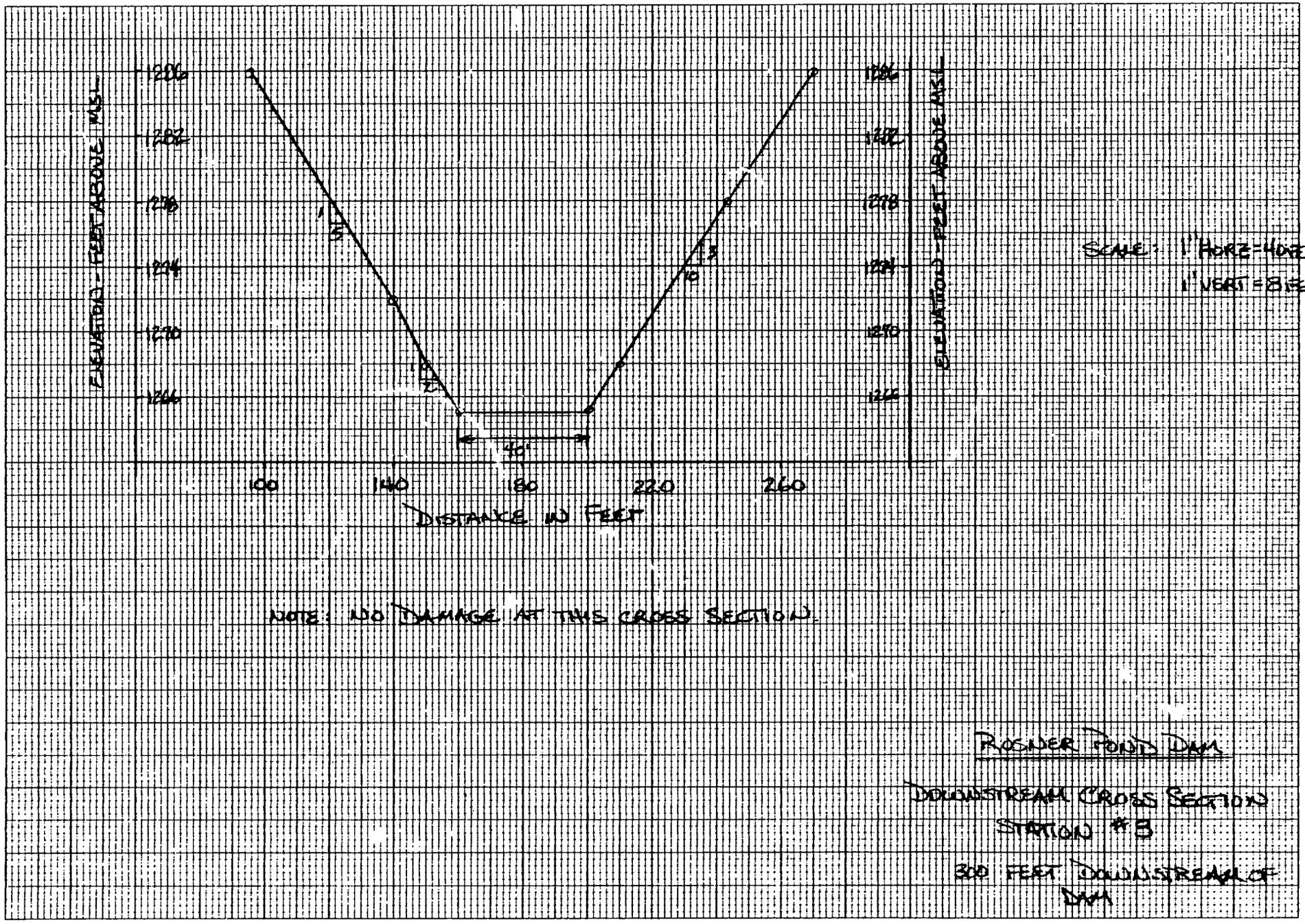
NOTE: NO DAMAGE AT THIS CROSS SECTION.

ROSIVER POND DAM

DOWNSTREAM CROSS SECTION -
STATION #2
100 FEET DOWNSTREAM OF
DAM

NO. 340-10½ DIETZGEN GRAPH PAPER
10 X 10 PER HALF INCH

DIETZGEN CORPORATION
MADE IN U.S.A.



SCALE: 1" HORZ = 40 FEET
1" VERT = 8 FEET

NOTE: NO DAMAGE AT THIS CROSS SECTION.

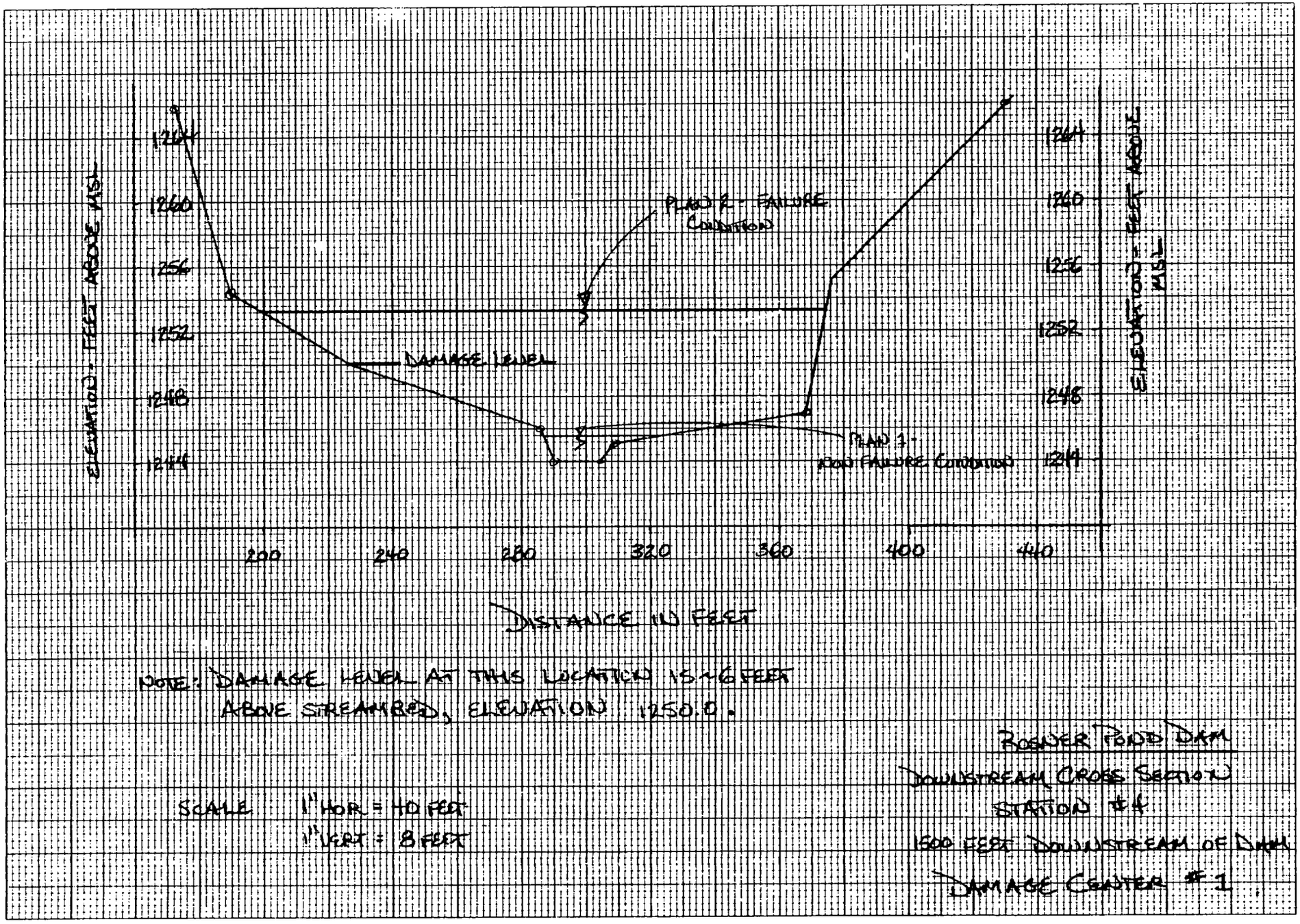
ROSIDER POINT DAM

DOWNSTREAM CROSS SECTION
STATION #3

300 FEET DOWNSTREAM OF DAM

NO. 340 - 10½ DIETZGEN GRAPH PAPER
10 X 10 PER HALF INCH

DIETZGEN CORPORATION
MADE IN U.S.A.



NOTE: DAMAGE LEVEL AT THIS LOCATION IS 6 FEET ABOVE STREAMBED, ELEVATION 1250.0.

SCALE 1" HOR = 40 FEET
1" VERT = 8 FEET

ROSIER POND DAM
DOWNSTREAM CROSS SECTION
STATION 44
1600 FEET DOWNSTREAM OF DAM
DAMAGE CENTER #1

BALTIMORE DISTRICT, CORPS OF ENGINEERS PAGE

SUBJECT DAM SAFETY ANALYSIS

COMPUTATIONS ROSNER POND DAM SHEET 9 OF SHEETS

COMPUTED BY JPB CHECKED BY DATE 5-28-81

OUTLET WORKS:

THE OUTLET WORKS CONSIST OF 2-14 INCH CAST IRON PIPES WHICH ARE PARTIALLY BLOCKED. A SMALL AMOUNT OF WATER WAS SEEN PASSING THROUGH THE TWO PIPE SYSTEM. DOWNSTREAM INVERT OF THE PIPE IS APPROXIMATELY AT ELEVATION 1278.0. MAXIMUM POOL AT ELEVATION 1297.0.

ASSUME $n=0.012$ AND THAT CHART 2 WOULD BE APPLICABLE IN THIS CASE. ALSO ASSUME, GROVE AND PROJECTING.

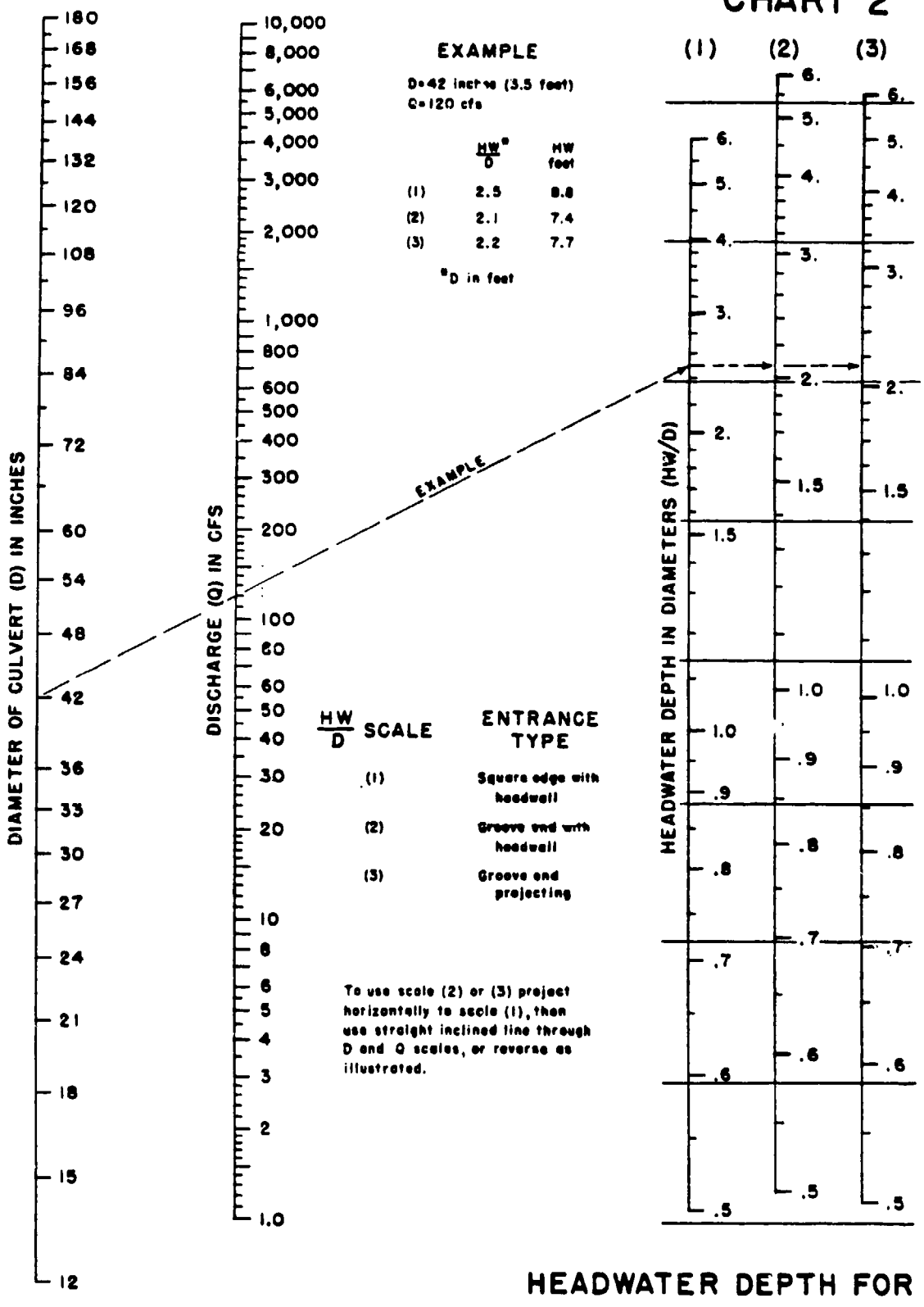
POOL ELEV.	HW(ft)	D(ft)	HW/D	Q cfs
1297.0	19	1.17	16.3	20

FOR 2 PIPES MAX DISCHARGE = 40 CFS

NOTE: DATA FROM U.S. DEPARTMENT OF COMMERCE, BUREAU OF PUBLIC ROADS, JAN. 1963.

NADB FORM 1232, 28 MAR 74

CHART 2



HEADWATER DEPTH FOR CONCRETE PIPE CULVERTS WITH INLET CONTROL

HEADWATER SCALES 2&3
REVISED MAY 1964

BUREAU OF PUBLIC ROADS JAN. 1963

```
1**********
 FLOOD HYDROGRAPH PACKAGE (HEC-1)
 DAM SAFETY VERSION     JULY 1978
   LAST MODIFICATION  01 APR 80
 **********
     1              A1     ROSNER DAM  DER NO. 90-64-190
     2              A2   DAM SAFTEY INSPECTION PROGRAM     4-29-81
     3              A3    OVERTOPPING ANALYSIS    ***  PRELIMINARY   ***
     4              B    144       0      20       0       0       0       0       0       0       0
     5              B1     5       0       0       0       0       0       0       0       0       0
     6              J      1       5       1
     7              J1  0.10    0.20    0.30    0.50    1.00
     8              K      0       1       0       0       0       0       1       0       0       0
     9              K1   RUNOFF FROM DRAINAGE AREA ABOVE ROSNER DAM
    10              M      1       1    2.26       0    2.26       0       0       0       1       0
    11              P      0    21.5     111     123     133     142
    12              T      0       0       0       0       0       0     1.0    0.05       0       0
    13              W   2.11    0.45
    14              X   -1.5   -0.05       2
    15              K      1       1       0       0       0       0       1       0       0       0
    16              K1   ROUTING ZPMF'S THRU ROSNER DAM  ***  NO SPILLWAY  **
    17              Y      0       0       0       1       1       0       0       0       0       0
    18              Y1     1       0       0       0       0       0 -1289.0      -1       0       0
    19              Y4  1297    1298    1299    1300    1305    1310
    20              Y5     0     300    1600    3820   21900   48000
    21              $S     0     125     150     210     270     340     380     420     520     800
    22              $E  1274    1289    1290    1292    1294    1296    1297    1298    1300    1305
    23              $$1297.0
    24              $D1297.0
    25              K     99
1                          PREVIEW OF SEQUENCE OF STREAM NETWORK CALCULATIONS

                                RUNOFF HYDROGRAPH AT          1
                                ROUTE HYDROGRAPH TO           1
                                END OF NETWORK


1**********
 FLOOD HYDROGRAPH PACKAGE (HEC-1)
 DAM SAFETY VERSION     JULY 1978
   LAST MODIFICATION  01 APR 80
 **********

 RUN  DATE= 81/04/29.
      TIME= 11.40.03.


                  ROSNER DAM  DER NO. 90-64-190
                 DAM SAFTEY INSPECTION PROGRAM     4-29-81
                  OVERTOPPING ANALYSIS    ***  PRELIMINARY   ***

                                    JOB SPECIFICATION
          NO      NHR     NMIN     IDAY      IHR     IMIN    METRC     IPLT     IPRT    NSTAN
         144        0       20        0        0        0        0        0        0        0
                                   JOPER      NWT   LROPT    TRACE
                                       5        0        0        0


                            MULTI-PLAN ANALYSES TO BE PERFORMED
                                NPLAN= 1 NRTIO= 5 LRTIO= 1
          RTIOS=     .10.   .20    .30    .50   1.00
```

ROSNER POND DAM
OVERTOPPING ANALYSIS
Page 1/3

********** ********** ********** ********** **********

SUB-AREA RUNOFF COMPUTATION

RUNOFF FROM DRAINAGE AREA ABOVE ROSNER DAM

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
1	0	0	0	0	0	1	0	0

HYDROGRAPH DATA

IHYDG	IUHG	TAREA	SNAP	TRSDA	TRSPC	RATIO	ISNOW	ISAME	LOCAL
1	1	2.26	0.00	2.26	0.00	0.000	0	1	0

PRECIP DATA

SPFE	PMS	R6	R12	R24	R48	R72	R96
0.00	21.50	111.00	123.00	133.00	142.00	0.00	0.00

TRSPC COMPUTED BY THE PROGRAM IS .800

LOSS DATA

LROPT	STRKR	DLTKR	RTIOL	ERAIN	STRKS	RTIOK	STRTL	CNSTL	ALSMX	RTIMP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	.05	0.00	0.00

UNIT HYDROGRAPH DATA

TP= 2.11 CP= .45 NTA= 0

RECESSION DATA

STRTQ= -1.50 QRCSN= -.05 RTIOR= 2.00

APPROXIMATE CLARK COEFFICIENTS FROM GIVEN SNYDER CP AND TP ARE TC= 6.78 AND R=10.04 INTERVALS

UNIT HYDROGRAPH 57 END-OF-PERIOD ORDINATES, LAG= 2.11 HOURS, CP= .45 VOL= 1.00

17.	62.	126.	197.	260.	301.	312.	294.	266.	241.
218.	197.	179.	162.	146.	132.	120.	108.	98.	89.
80.	73.	66.	60.	54.	49.	44.	40.	36.	33.
30.	27.	24.	22.	20.	18.	16.	15.	13.	12.
11.	10.	9.	8.	7.	7.	6.	5.	5.	4.
4.	4.	3.	3.	3.	2.	2.			

********** ********** ********** ********** **********

HYDROGRAPH ROUTING

ROUTING %PMF'S THRU ROSNER DAM *** NO SPILLWAY **

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
1	1	0	0	0	0	1	0	0

ROUTING DATA

QLOSS	CLOSS	AVG	IRES	ISAME	IOPT	IPMP	LSTR
0.0	0.000	0.00	1	1	0	0	0

NSTPS	NSTDL	LAG	AMSKK	X	TSK	STORA	ISPRAT
1	0	0	0.000	0.000	0.000	-1289.	-1

STAGE	1297.00	1298.00	1299.00	1300.00	1305.00	1310.00
FLOW	0.00	300.00	1600.00	3820.00	21900.00	48000.00

CAPACITY=	0.	125.	150.	210.	270.	340.	380.	420.	520.	800.
ELEVATION=	1274.	1289.	1290.	1292.	1294.	1296.	1297.	1298.	1300.	1305.

CREL	SPWID	COOW	EXPW	ELEVL	COOL	CAREA	EXPL
1297.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

DAM DATA

TOPEL	COOD	EXPD	DAMWID
1297.0	0.0	0.0	0.

STATION 1, PLAN 1, RATIO 1

END-OF-PERIOD HYDROGRAPH ORDINATES

ROSNER POND DAM
OVERTOPPING ANALYSIS

1 ********** ********** ********** ********** **********

PEAK FLOW AND STORAGE (END OF PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND (CUBIC METERS PER SECOND)
AREA IN SQUARE MILES (SQUARE KILOMETERS)

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO FLOWS RATIO 1 .10	RATIO 2 .20	RATIO 3 .30	RATIO 4 .50	RATIO 5 1.00
HYDROGRAPH AT	1	2.26	1	420.	839.	1259.	2098.	4196.
		(5.85)	(	11.88)(	23.76)(	35.64)(	59.41)(	118.82)(
ROUTED TO	1	2.26	1	0.	586.	1144.	2069.	4184.
		(5.85)	(	0.00)(	16.60)(	32.39)(	58.59)(	118.49)(

1 SUMMARY OF DAM SAFETY ANALYSIS

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1289.00	1297.00	1297.00
STORAGE	125.	380.	380.
OUTFLOW	0.	0.	0.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.10	1296.49	0.00	360.	0.	0.00	0.00	0.00
.20	1298.22	1.22	431.	586.	5.67	44.33	0.00
.30	1298.65	1.65	452.	1144.	7.00	43.00	0.00
.50	1299.21	2.21	481.	2069.	8.33	42.33	0.00
1.00	1300.10	3.10	526.	4184.	10.33	42.00	0.00

1**********
FLOOD HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION JULY 1978
LAST MODIFICATION 01 APR 80
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ROSNER POND DAM
OVERTOPPING ANALYSIS
PAGE 3/3

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1*******************************
FLOOD HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION     JULY 1978
  LAST MODIFICATION  01 APR 80
*******************************
    1              A1     ROSNER DAM  DER NO. 90-64-190
    2              A2   DAM SAFTEY INSPECTION PROGRAM     4-29-81
    3              A3    OVERTOPPING ANALYSIS    *** PRELIMINARY   ***
    4              B   144       0      20       0       0       0       0       0       0       0
    5              B1    5       0       0       0       0       0       0       0       0       0
    6              J     4       1       1
    7              J1 0.13
    8              K     0       1       0       0       0       0       1       0       0       0
    9              K1   RUNOFF FROM DRAINAGE AREA ABOVE ROSNER DAM
   10              M     1       1    2.26       0    2.26       0       0       0       1       0
   11              P     0    21.5     111     123     133     142
   12              T     0       0       0       0       0       0     1.0    0.05       0       0
   13              W  2.11    0.45
   14              X  -1.5   -0.05       2
   15              K     1       1       0       0       0       0       1       0       0       0
   16              K1   ROUTING %PMF'S THRU ROSNER DAM  ***  NO SPILLWAY  **
   17              Y     0       0       0       1       1       0       0       0       0       0
   18              Y1    1       0       0       0       0       0 -1289.0      -1       0       0
   19              Y4 1297    1298    1299    1300    1305    1310
   20              Y5    0     300    1600    3820   21900   48000
   21              $S    0     125     150     210     270     340     380     420     520     800
   22              $E 1274    1289    1290    1292    1294    1296    1297    1298    1300    1305
   23              $$1297.0
   24              $D1297.0
   25              $B   75       1    1280    0.33    1289    1310
   26              $B   75       1    1280    0.33    1289  1297.5
   27              $B   75       1    1280    1.00    1289  1297.5
   28              $B   75       1    1280    2.00    1289  1297.5
   29              K     1       2       0       0       0       0       1
   30  SEE         K1   ROUTE FLOWS THROUGH 1ST DOWNSTREAM CROSS SECTION
   31  PAGE        Y     0       0       0       1       1
   32  D-12        Y1    1       0
   33              Y6 0.07    0.05    0.07    1270    1294     100   0.035
   34              Y7   96    1294     156    1282     172    1274     180    1270     202    1270
   35              Y7  216    1274     244    1282     284    1294
   36              K     1       3       0       0       0       0       1
   37  SEE         K1   ROUTE FLOWS THROUGH 2ND DOWNSTREAM CROSS SECTION
   38  PAGE        Y     0       0       0       1       1
   39              Y1    1       0
   40  D-13        Y6 0.07    0.05    0.07    1265    1286     200   0.025
   41              Y7   94    1286     140    1272     150    1268     160    1265     200    1265
   42              Y7  210    1268     244    1278     270    1286
   43              K     1       4       0       0       0       0       1
   44  SEE-        K1   ROUTE FLOWS THROUGH DAMAGE CENTER
   45  PAGE        Y     0       0       0       1       1
   46  D-14 AND    Y1    1       0
   47  PLATE       Y6 0.07    0.05    0.07    1244    1266    1200  0.0175
   48  E-II        Y7  172    1266     190    1254     286    1246     290    1244     305    1244
   49              Y7  308    1245     368    1247     430    1266
   50              K    99
1                        PREVIEW OF SEQUENCE OF STREAM NETWORK CALCULATIONS

                                 RUNOFF HYDROGRAPH AT          1
                                 ROUTE HYDROGRAPH TO           1
                                 ROUTE HYDROGRAPH TO           2
                                 ROUTE HYDROGRAPH TO           3
                                 ROUTE HYDROGRAPH TO           4
                                 END OF NETWORK


1*******************************
FLOOD HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION     JULY 1978
  LAST MODIFICATION  01 APR 80
*******************************

RUN  DATE= 81/04/30.
     TIME= 07.56.06.
```

ROSNER DAM DER NO. 90-64-190
DAM SAFTEY INSPECTION PROGRAM 4-29-81
OVERTOPPING ANALYSIS *** PRELIMINARY ***

JOB SPECIFICATION

NQ	NHR	NMIN	IDAY	IHR	IMIN	METRC	IPLT	IPRT	NSTAN
144	0	20	0	0	0	0	0	0	0
			JOPER	NWT	LROPT	TRACE			
			5	0	0	0			

MULTI-PLAN ANALYSES TO BE PERFORMED
NPLAN= 4 NRTIO= 1 LRTIO= 1
RTIOS= .13

********** ********** ********** ********** **********

SUB-AREA RUNOFF COMPUTATION

RUNOFF FROM DRAINAGE AREA ABOVE ROSNER DAM

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
1	0	0	0	0	0	1	0	0

HYDROGRAPH DATA

IHYDG	IUNG	TAREA	SNAP	TRSDA	TRSPC	RATIO	ISNOW	ISAME	LOCAL
1	1	2.26	0.00	2.26	0.00	0.000	0	1	0

PRECIP DATA

SPFE	PMS	R6	R12	R24	R48	R72	R96
0.00	21.50	111.00	123.00	133.00	142.00	0.00	0.00

TRSPC COMPUTED BY THE PROGRAM IS .800

LOSS DATA

LROPT	STRKR	DLTKR	RTIOL	ERAIN	STRKS	RTIOK	STRTL	CNSTL	ALSMX	RTIMP
0	0.00	0.00	1.00	0.00	0.00	1.00	1.00	.05	0.00	0.00

UNIT HYDROGRAPH DATA
TP= 2.11 CP= .45 NTA= 0

RECESSION DATA
STRTQ= -1.50 QRCSN= -.05 RTIOR= 2.00
APPROXIMATE CLARK COEFFICIENTS FROM GIVEN SNYDER CP AND TP ARE TC= 6.78 AND R=10.04 INTERVALS

UNIT HYDROGRAPH 57 END-OF-PERIOD ORDINATES, LAG= 2.11 HOURS, CP= .45 VOL= 1.00

17.	62.	126.	197.	260.	301.	312.	294.	266.	241.
218.	197.	179.	162.	146.	132.	120.	108.	98.	89.
80.	73.	66.	60.	54.	49.	44.	40.	36.	33.
30.	27.	24.	22.	20.	18.	16.	15.	13.	12.
11.	10.	9.	8.	7.	7.	6.	5.	5.	4.
4.	4.	3.	3.	3.	2.	2.			

ROSNER POND DAM
BREACH ANALYSIS

********** ********** ********** ********** **********

HYDROGRAPH ROUTING

ROUTING ZPMF'S THRU ROSNER DAM *** NO SPILLWAY **

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
1	1	0	0	0	0	1	0	0

ALL PLANS HAVE SAME ROUTING DATA

QLOSS	CLOSS	AVG	IRES	ISAME	IOPT	IPMP	LSTR
0.0	0.000	0.00	1	1	0	0	0

NSTPS	NSTDL	LAG	AMSKK	X	TSK	STORA	ISPRAT
1	0	0	0.000	0.000	0.000	-1289.	-1

STAGE	1297.00	1298.00	1299.00	1300.00	1305.00	1310.00				
FLOW	0.00	300.00	1600.00	3820.00	21900.00	48000.00				
CAPACITY=	0.	125.	150.	210.	270.	340.	380.	420.	520.	800.
ELEVATION=	1274.	1289.	1290.	1292.	1294.	1296.	1297.	1298.	1300.	1305.

CREL	SPWID	COGW	EXPW	ELEVL	COGL	CAREA	EXPL
1297.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

DAM DATA

TOPEL	COGD	EXPD	DAMWID
1297.0	0.0	0.0	0.

DAM BREACH DATA

BRWID	Z	ELBM	TFAIL	WSEL	FAILEL
75.	1.00	1280.00	.33	1289.00	1310.00

PEAK OUTFLOW IS 157. AT TIME 47.33 HOURS

DAM BREACH DATA

BRWID	Z	ELBM	TFAIL	WSEL	FAILEL
75.	1.00	1280.00	.33	1289.00	1297.50

STATION 1, PLAN 2, RATIO 1

BEGIN DAM FAILURE AT 47.00 HOURS

PEAK OUTFLOW IS 13851. AT TIME 47.33 HOURS

DAM BREACH DATA

BRWID	Z	ELBM	TFAIL	WSEL	FAILEL
75.	1.00	1280.00	1.00	1289.00	1297.50

STATION 1, PLAN 3, RATIO 1

BEGIN DAM FAILURE AT 47.00 HOURS

PEAK OUTFLOW IS 7258. AT TIME 47.98 HOURS

DAM BREACH DATA

BRWID	Z	ELBM	TFAIL	WSEL	FAILEL
75.	1.00	1280.00	2.00	1289.00	1297.50

STATION 1, PLAN 4, RATIO 1

BEGIN DAM FAILURE AT 47.00 HOURS

PEAK OUTFLOW IS 2615. AT TIME 48.00 HOURS

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HYDROGRAPH ROUTING

ROUTE FLOWS THROUGH 1ST DOWNSTREAM CROSS SECTION

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
2	1	0	0	0	0	1	0	0

ALL PLANS HAVE SAME ROUTING DATA

QLOSS	CLOSS	AVG	IRES	ISAME	IOPT	IPMP	LSTR
0.0	0.000	0.00	1	1	0	0	0

NSTPS	NSTDL	LAG	AMSKK	X	TSK	STORA	ISPRAT
1	0	0	0.000	0.000	0.000	0.	0

NORMAL DEPTH CHANNEL ROUTING

QN(1)	QN(2)	QN(3)	ELNVT	ELMAX	RLNTH	SEL
.0700	.0500	.0700	1270.0	1294.0	100.	.03500

CROSS SECTION COORDINATES—STA,ELEV,STA,ELEV—ETC
96.00 1294.00 156.00 1282.00 172.00 1274.00 180.00 1270.00 202.00 1270.00
216.00 1274.00 244.00 1282.00 284.00 1294.00

STORAGE	0.00	.07	.17	.28	.42	.57	.75	.94	1.16	1.39
	1.65	1.93	2.25	2.60	2.97	3.38	3.82	4.29	4.79	5.32
OUTFLOW	0.00	190.42	643.91	1352.71	2478.52	3945.73	5738.64	7868.15	10345.81	13183.62
	16363.05	19935.91	23961.85	28462.39	33460.73	38980.22	45043.94	51674.52	58894.17	66724.64
STAGE	1270.00	1271.26	1272.53	1273.79	1275.05	1276.32	1277.58	1278.84	1280.11	1281.37
	1282.63	1283.89	1285.16	1286.42	1287.68	1288.95	1290.21	1291.47	1292.74	1294.00
FLOW	0.00	190.42	643.91	1352.71	2478.52	3945.73	5738.64	7868.15	10345.81	13183.62
	16363.05	19935.91	23961.85	28462.39	33460.73	38980.22	45043.94	51674.52	58894.17	66724.64

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HYDROGRAPH ROUTING

ROUTE FLOWS THROUGH 2ND DOWNSTREAM CROSS SECTION

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
3	1	0	0	0	0	1	0	0

ALL PLANS HAVE SAME ROUTING DATA

QLOSS	CLOSS	AVG	IRES	ISAME	IOPT	IPMP	LSTR
0.0	0.000	0.00	1	1	0	0	0

NSTPS	NSTDL	LAG	AMSKK	X	TSK	STORA	ISPRAT
1	0	0	0.000	0.000	0.000	0.	0

NORMAL DEPTH CHANNEL ROUTING

QN(1)	QN(2)	QN(3)	ELNVT	ELMAX	RLNTH	SEL
.0700	.0500	.0700	1265.0	1286.0	200.	.02500

CROSS SECTION COORDINATES—STA,ELEV,STA,ELEV—ETC
94.00 1286.00 140.00 1272.00 150.00 1268.00 160.00 1265.00 200.00 1265.00
210.00 1268.00 244.00 1278.00 270.00 1286.00

STORAGE	0.00	.22	.48	.78	1.11	1.47	1.87	2.30	2.77	3.27
	3.81	4.40	5.01	5.67	6.36	7.09	7.85	8.65	9.49	10.37
OUTFLOW	0.00	229.37	754.33	1572.28	2745.14	4200.59	5938.79	7959.62	10272.99	12887.95
	15812.15	19053.49	22621.19	26525.10	30769.03	35360.84	40308.41	45619.63	51302.39	57364.55
STAGE	1265.00	1266.11	1267.21	1268.32	1269.42	1270.53	1271.63	1272.74	1273.84	1274.95
	1276.05	1277.16	1278.26	1279.37	1280.47	1281.58	1282.68	1283.79	1284.89	1286.00
FLOW	0.00	229.37	754.33	1572.28	2745.14	4200.59	5938.79	7959.62	10272.99	12887.95
	15812.15	19053.49	22621.19	26525.10	30769.03	35360.84	40308.41	45619.63	51302.39	57364.55

********** ********** ********** ********** **********

HYDROGRAPH ROUTING

ROUTE FLOWS THROUGH DAMAGE CENTER

ISTAQ	ICOMP	IECON	ITAPE	JPLT	JPRT	INAME	ISTAGE	IAUTO
4	1	0	0	0	0	1	0	0

ALL PLANS HAVE SAME ROUTING DATA

QLOSS	CLOSS	AVG	IRES	ISAME	IOPT	IPMP	LSTR
0.0	0.000	0.00	1	1	0	0	0

NSTPS	NSTDL	LAG	AMSKK	X	TSK	STORA	ISPRAT
1	0	0	0.000	0.000	0.000	0.	0

NORMAL DEPTH CHANNEL ROUTING

QN(1)	QN(2)	QN(3)	ELNVT	ELMAX	RLNTH	SEL
.0700	.0500	.0700	1244.0	1266.0	1200.	.01750

CROSS SECTION COORDINATES--STA,ELEV,STA,ELEV--ETC
172.00 1266.00 190.00 1254.00 286.00 1246.00 290.00 1244.00 305.00 1244.00
308.00 1245.00 368.00 1247.00 430.00 1266.00

STORAGE	0.00	.58	1.98	4.76	8.27	12.34	16.98	22.18	27.95	34.25
	40.81	47.55	54.46	61.54	68.81	76.24	83.86	91.65	99.61	107.75
OUTFLOW	0.00	81.55	340.93	947.36	1974.03	3390.33	5210.47	7453.70	10141.34	13375.55
	17213.61	21496.75	26213.73	31356.63	36919.85	42899.49	49292.98	56098.73	63316.01	70944.70
STAGE	1244.00	1245.16	1246.32	1247.47	1248.63	1249.79	1250.95	1252.11	1253.26	1254.42
	1255.58	1256.74	1257.89	1259.05	1260.21	1261.37	1262.53	1263.68	1264.84	1266.00
FLOW	0.00	81.55	340.93	947.36	1974.03	3390.33	5210.47	7453.70	10141.34	13375.55
	17213.61	21496.75	26213.73	31356.63	36919.85	42899.49	49292.98	56098.73	63316.01	70944.70

Rosner Pond Dam
Breach Analysis
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PEAK FLOW AND STORAGE (END OF PERIOD) SUMMARY FOR MULTIPLE PLAN-RATIO ECONOMIC COMPUTATIONS
FLOWS IN CUBIC FEET PER SECOND (CUBIC METERS PER SECOND)
AREA IN SQUARE MILES (SQUARE KILOMETERS)

OPERATION	STATION	AREA	PLAN	RATIOS APPLIED TO FLOWS RATIO 1 .13
HYDROGRAPH AT	1	2.26 (5.85)	1	545. (15.45)(
			2	545. (15.45)(
			3	545. (15.45)(
			4	545. (15.45)(
ROUTED TO	1	2.26 (5.85)	1	157. (4.44)(
			2	13851. (392.21)(
			3	7232. (204.80)(
			4	2615. (74.05)(
ROUTED TO	2	2.26 (5.85)	1	157. (4.45)(
			2	13751. (389.38)(
			3	7230. (204.74)(
			4	2609. (73.87)(
ROUTED TO	3	2.26 (5.85)	1	157. (4.45)(
			2	13515. (382.71)(
			3	7227. (204.65)(
			4	2592. (73.40)(
ROUTED TO	4	2.26 (5.85)	1	157. (4.44)(
			2	11383. (322.32)(
			3	7232. (204.79)(
			4	2433. (68.90)(

1

SUMMARY OF DAM SAFETY ANALYSIS

PLAN 1 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1289.00	1297.00	1297.00
STORAGE	125.	380.	380.
OUTFLOW	0.	0.	0.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.13	1297.52	.52	401.	157.	3.00	47.33	0.00

PLAN 2 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1289.00	1297.00	1297.00
STORAGE	125.	380.	380.
OUTFLOW	0.	0.	0.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.13	1297.51	.51	401.	13851.	2.18	47.33	47.00

PLAN 3 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1289.00	1297.00	1297.00
STORAGE	125.	380.	380.
OUTFLOW	0.	0.	0.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.13	1297.51	.51	401.	7258.	2.39	47.98	47.00

PLAN 4 .....

	INITIAL VALUE	SPILLWAY CREST	TOP OF DAM
ELEVATION	1289.00	1297.00	1297.00
STORAGE	125.	380.	380.
OUTFLOW	0.	0.	0.

RATIO OF PMF	MAXIMUM RESERVOIR W.S.ELEV	MAXIMUM DEPTH OVER DAM	MAXIMUM STORAGE AC-FT	MAXIMUM OUTFLOW CFS	DURATION OVER TOP HOURS	TIME OF MAX OUTFLOW HOURS	TIME OF FAILURE HOURS
.13	1297.52	.52	401.	2615.	2.67	48.00	47.00

Rosner Pond Dam
Breach Analysis
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PLAN 1 STATION 2

RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS
.13	157.	1271.0	47.67

PLAN 2 STATION 2

RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS
.13	13751.	1281.6	47.33

PLAN 3 STATION 2

RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS
.13	7230.	1278.5	48.00

PLAN 4 STATION 2

RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS
.13	2	1275.2	48.00

PLAN 1 STATION 3

RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS
.13	157.	1265.8	47.67

PLAN 2 STATION 3

RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS
.13	13515.	1275.2	47.33

PLAN 3 STATION 3

RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS
.13	7227.	1272.3	48.00

PLAN 4 STATION 3

RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS
.13	2592.	1269.3	48.00

PLAN 1 STATION 4

RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS
.13	157.	1245.5	47.67

PLAN 2 STATION 4

RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS
.13	11383.	1253.7	47.33

PLAN 3 STATION 4

RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS
.13	7232.	1252.0	48.00

PLAN 4 STATION 4

RATIO	MAXIMUM FLOW,CFS	MAXIMUM STAGE,FT	TIME HOURS
.13	2433.	1249.0	48.00

1**********
FLOOD HYDROGRAPH PACKAGE (HEC-1)
DAM SAFETY VERSION JULY 1978
LAST MODIFICATION 01 APR 80
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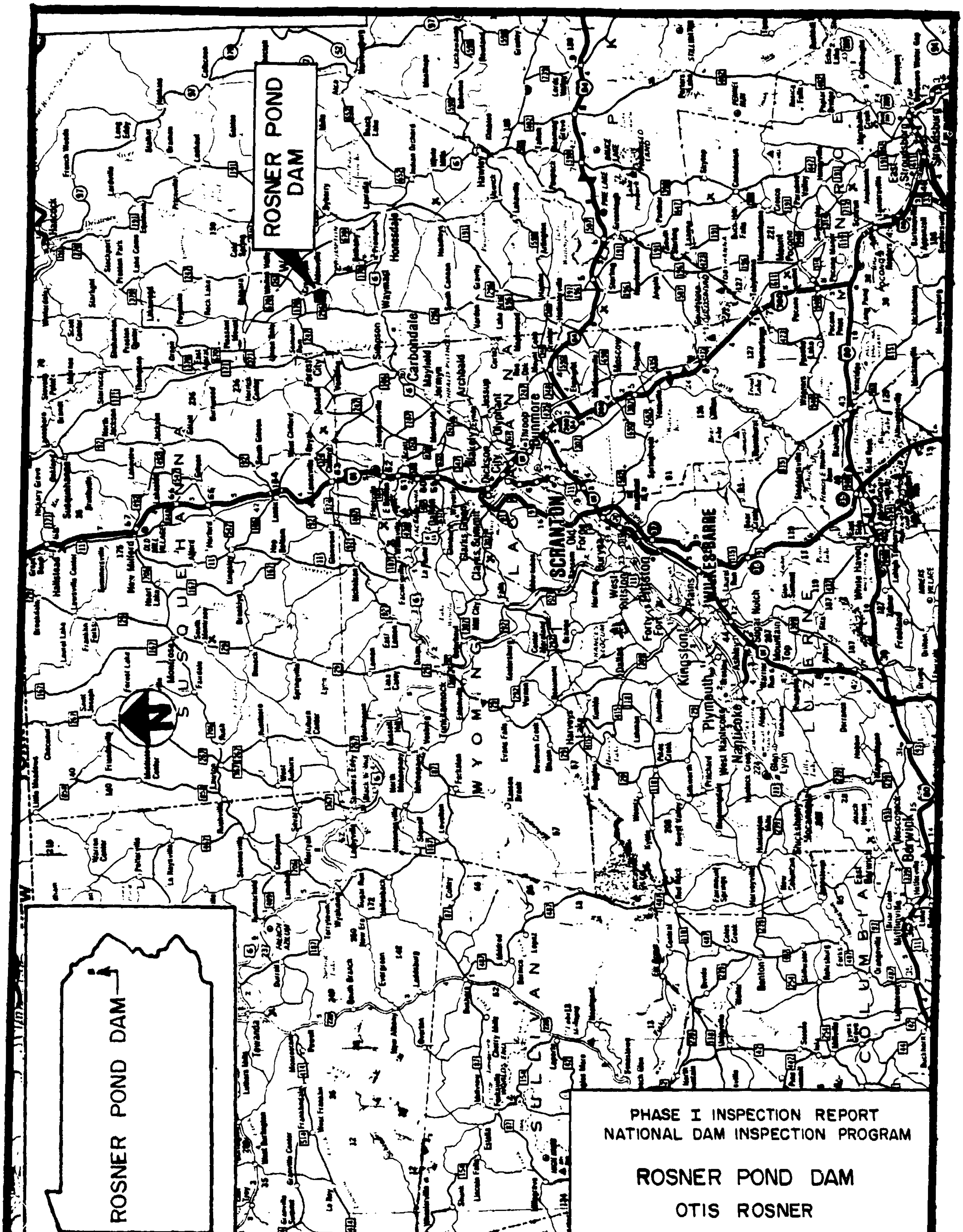
APPENDIX E

PLATES



PHASE I INSPECTION REPORT
NATIONAL DAM INSPECTION PROGRAM

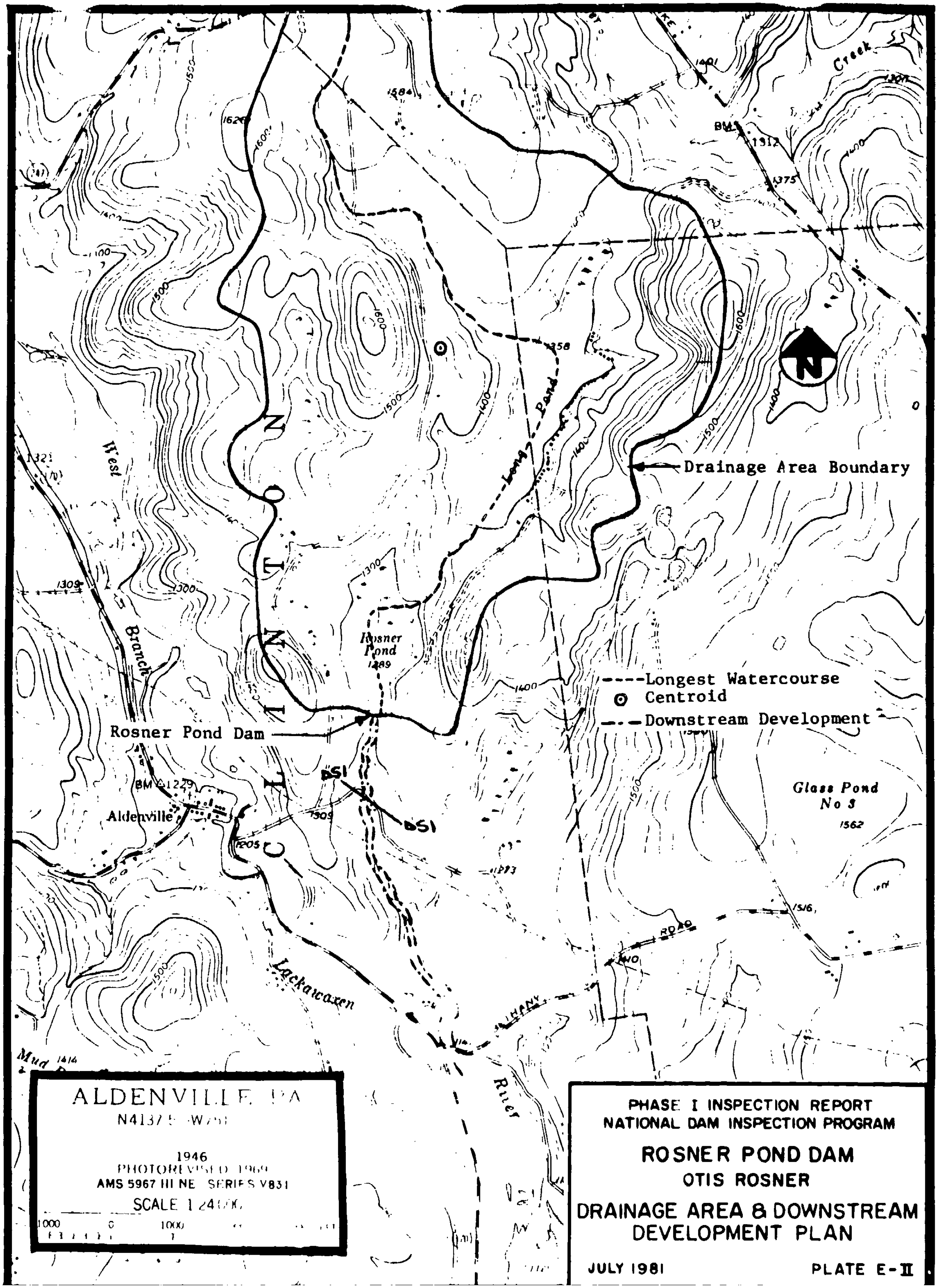
ROSNER POND DAM

OTIS ROSNER

LOCATION MAP

JULY 1981

PLATE E-I


Drainage Area Boundary
Longest Watercourse
Centroid
Downstream Development
Rosner Pond Dam
Rosner Pond
1289
DS1
Aldenville
West Branch
Lackawaxen River
Long Pond
Glass Pond No 3
Creek
ALDENVILLE PA
1946
AMS 5967 III NE SERIES V831
PHASE I INSPECTION REPORT
NATIONAL DAM INSPECTION PROGRAM
ROSNER POND DAM
OTIS ROSNER
DRAINAGE AREA & DOWNSTREAM
DEVELOPMENT PLAN
JULY 1981
PLATE E-II

APPENDIX F

GEOLOGY

GENERAL GEOLOGY

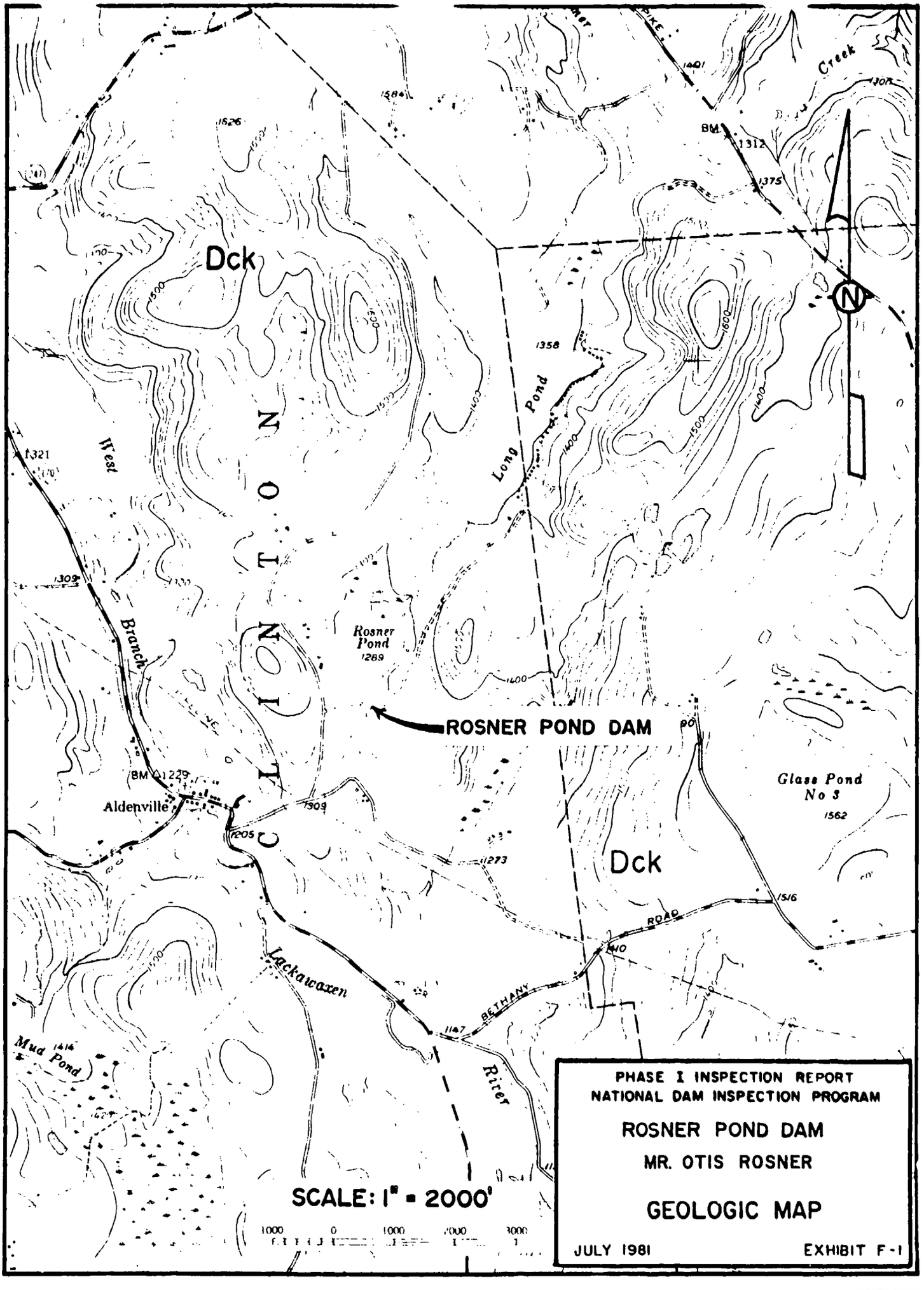
Bedrock at Rosner Pond Dam is reported to be red shale and gray siltstone of the Catskill Formation. It is well bedded in thin to medium beds with closely spaced, well developed joints. Siltstone is moderately resistant to weathering and breaking along joints into tabular and blocky fragments.

The thin covering of soil at this site appears to be in situ material. The large boulders and rocks that litter the valley are greenish sandstone and reddish sandstone.

Legend

(Bedrock)

Dck CATSKILL FORMATION UNDIVIDED - Succession of grayish-red sandstone, siltstone, and shale generally in fining - upward cycles; some gray sandstone and conglomerate.


Dck
Dck
Dck
ROSNER POND DAM
Rosner Pond
1289
Long Pond
West Branch
Aldenville
Glass Pond No 3
1562
Lackawaxen River
Mud Pond
1414
BM 1229
BM 1312
1321
1358
1309
1205
1273
1516
1147
ROAD
BETHANY
Creek
SCALE: 1" = 2000'
1000 0 1000 2000 3000
PHASE I INSPECTION REPORT
NATIONAL DAM INSPECTION PROGRAM
ROSNER POND DAM
MR. OTIS ROSNER
GEOLOGIC MAP
JULY 1981
EXHIBIT F-1